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HANDBOOK OF ARCHITECTURE

Part II

ARCHITECTURAL STYLES

Volume 2-2

RENAISSANCE ARCHITECTURE IN ITALY

By Joseph Davis, Ph. D., D. Eng.

Privy Counsellor and Professor in Polytechnicum at Karlsruhe

Second Edition

Leipzig

1914

Translated by N. Clifford Ricker, D. Arch.

Professor of Architecture

in the

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nollow tiles radially in an entirely normal way. Thus was a avoided in the simplest manner the costly covering with metal sneets. This is a well considered tecannical procedure and n not a caprice. The drum of the dome, that rises from the lower tiled roof is also plastered down to this, as well as the wall surfaces of the entire building. The columns of the four porticos are likewise covered with stucco, the fronts of the architraves are faced with thin stone slabs, the segmental vaults of the porticos are of wooden laths and are plastered. The strings and steps of the flights of steps are again of stone. Two of the stairways in the dead angles of the rotunda are oval and of stone, self-supporting, furnished with simple iron railings and lead from the ground floor to the attic. The two others were closed to me at my visit. These stairways receive their light through the small windows above the entrance doorways to the circular hall. The internal room in the ground story beneath the rotunda likewise receives its light and air through the rotunda. In the middle of its floor is inserted a great perforated stone slab, which is adorned by a flat carved faun's head, whose eyes, mouth, nostrils, ears and hair are perforated, thus making possible the admission of light.

Besides the rotunda, the adjacent rooms are very well treated. Worthny of consideration are the ceiling paintings, at the vaulted entrances, executed with cupids and female figures scattering flowers, kept in the style of the paintings of the circular room. Other rooms are covered by trough and tunnel vaults, and exhibit the style of Giovanni da Udine, or as they are treated in the Villa of Pope Julius at Rome. Doorway enclosures of white limestone with inlays of Veronese marble, great fireplaces of the same material, in part with additions of stucco; majolica and clay tile coverings of the floors still exist. Simple but handsome in treatment are also the small rooms in the half story. With the necessary furniture, carpets, hangings and lighting fixtures, these make the building actually habitable. The cellar affords space for kitchen and housekeeping in abundance.

But it should not be forgotten, that the Rotonda is not an architectural work by itself, but that it rather possesses e extensive and well preserved additional structures for impor-

On account of the fact that the investigation was conducted in a very hasty manner, it is not possible to give a complete account of the results. It is, however, believed that the results will be of great value to the country.

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important farming purposes, which were closely connected with the nobleman's residence.

On account of purely theoretical investigations and researches, as to what Palladio conceived or could not have intended in this design, or what omissions may be attributed to him or another, men have forgotten to understand the plan of the whole as a country house with agricultural purposes.

It is singular, that ^{Goethe} in his letters of 1786 he does not express himself at all concerning the internal decoration, which is still not bad. Bertotti (Scamozzi) in his work of the same year 1786 at least mentions the paintings and the figure ornament, and says openly and honorably of the decoration. -- "And ornaments that scarcely harmonize with the good taste of Palladio." The proof that the "ornaments" do not date from the time of Palladio had already been given. But Goethe must have seen them, which does not appear to have been the case with the new investigator of Palladio. I cannot thereby establish any relations between him and Goethe. For a judgment of the location of the building, the latter refers to the detailed description of Palladio, in which he justifies the peculiar form of the structure. O. Bertotti puts this in the following words:-- "A pleasant hill with gentle and easy slope, on which this house must be erected, harmonized perfectly with the charming situation of the place. To arrange for the occupants the entrancing outlooks formed by the views of the surroundings, he built the house in a square form, he erected porticos on each front, and then seeking to combine convenience and decency in the interior, he made a circular hall in the middle of the building, surrounded by four rooms with as many cabinets, which have their entrances and exits in the vestibules leading from the porticos to the hall."

But all this gives no idea of the location of the building in the grounds, all of which must be created, and whereon all publications, even the most recent, afford no conclusions.

A broad road of access now leads to the entrance gateway, which one may likewise reach by a narrow footpath from Monte Berico. 160

Note 160. Our Guidebook indeed states, that one should turn there, since access to the villa is forbidden, which some visitors have noted. But the present owner has permitted for-

foreigners for more than a year, and has even provided a book for the registration of visitors.

A gently inclined ramp leads between the walls of two service buildings to a small terrace supported by high retaining walls, whose substructure is utilized for farming rooms, above which rises the residence. The old Italian rule requires the preparation of an inclined site in one or more terraces for the reception of buildings with a free outlook around them. Men did not desire to conceal themselves and the building behind neither shrubbery nor protecting walls. A single terrace sufficed; it is of irregular form, of small extent and enclosed by a parapet wall. There is no place for garden designs in the grand style, and it was not desired to restrict the view by high trees, so that supporting walls descend steeply. The exterior of the residence is placed close to the parapet wall, being only 6.6 ft. from it. The area at the angle of the house overlooking the valley has become thereby a sort of farm court with a draw well -- the only water supply up there. My small sketch in Fig. 359 gives a view of the location from Monte Berico, and it shows the combination of the farm buildings, terraces and retaining walls with the nobleman's residence, and must be more instructive for the judgement of the whole, than the "academically drawn" plates of the gentlemen, who onesidedly engage in architectural history and architectural esthetics. That those plates also do not here agree with the structure in reality, need not be further emphasized. The example of a building is not always so clearly worked out and so simple, as it seems in the minds of outsiders, and certain things must one have suffered, passed through and experienced in his own life. Of what use are the most beautiful deductions, if they are based on uncertain or even false grounds? The helical covering as a roof over the circular hall is an error in all drawings, as well as the form of the mezzanine windows.

238. Villa Forcari.

In a similar sense must be considered the Villa of Francesco Forcari, located on the Brenta and completed by Palladio in 1560, judging from an engraving of Costa. Likewise at this is the farm buildings were erected in the immediate vicinity, being very closely connected with the residence. The Ionic

portico with its two flights of steps facing the bank of the river, belongs to the most dignified and noblest, that Palladio created, and if the pediment-shaped addition to the roof were placed directly over the gable of the portico, the facade must be regarded as perfect. (See in Burger the plan and elevation on Plates 31 and 32; O. Bertotti (Scamozzi) Vol. 3, Pls. 1 - 3, and from these, Fig. 364.

Only from the engraving mentioned do we know, how the residence must be considered in connection with other places and with its nearest surroundings. The cold architecture suddenly receives flesh and blood.

239. Villa Pisani.

On account of the mode of combination of farm buildings and residence and the strictly symmetrical grouping of both produced thereby, and by the arrangement of arched passages and driveways is specially interesting Villa Pisani near Montagna, begun but not completed by Francesco. (See O. Bertotti - Scamozzi, Pl. IX, Fig. 365).

452 By the peculiar treatment of the entrance as an arched portico and the omission of the antique pediment, Villa Pojana should not remain without mention. (See F. Burger's Plate 37, photoprint of plan and elevation, also Fig. 367, an extract therefrom).

240. Villa Pisani near Bagnolo.

Fig. 366. Gives a representation of the form of plan of Villa Pisani near Bagnolo, with middle hall, loggia and portico. Adjoining the portico at right and left extend other porticos, which enclose the forecourt. The middle part of the main facade with the small flanking towers and the adjacent porticos are represented in Fig. 367.

241. Villa Trissino near Meledo.

453 Located on the Brendola southwest of Vicenza may still be conceived Villa Trissino, that had it been completed, would indeed have been the most beautiful villa of Palladio. Begun in the year 1570, the work soon came to an end and did not go beyond the substructure. The foundations for the residence were not laid, and its existing arrangement of plan has nothing to do with the plan of Palladio. It must have been an extension of the ground idea of the Rotonda, with the similar circular hall covered by a dome, whose walls were to be ador-

adorned by Corinthian half columns intended to support a gallery. On two sides were projecting temple porticos with steps before them, on the other two sides being planned included loggias as temple fronts with four columns.

Figs. 368 to 370, according to O. Bertotti-Scamozzi, give the plan of the villa, unfortunately again without the addition of the arrangement and the nearest surroundings. Entrance is made by a great flight of steps and by two side stairways, which lead to quadrant-shaped covered columnar porticos closed at the rear. From thence one ascends a continuous flight of steps to quadrant-shaped gardens, connected together by a horizontal space and combined in an area to be animated by 454 fountains. By this was determined the height of the terrace for the residence, that rose above a high base just as at the Rotonda, and must be reached by 4 flights of steps. The plan forms a rectangle, before its longer sides being placed porticos, by which the facade mentioned would be divided into three approximately equal parts. This equality of the parts has an unfavorable effect, since no part dominates. The roof is heavy, the crowning dome on it is undivided and appears massive, and the lantern with the small figures is unskillful.

However simply great may be arranged the development, it suffers by these defects in proportions, which however are avoided at the ends. The fronts of the retaining walls of the little quadrant gardens at the right and left of the middle flight of steps must have been calculated for effect of surfaces, thus being without any architectural subdivision; in any case they were reserved for plants or trellisses. At the top of these and commencing from the same terrace and at each side adjoin at a right angle covered porticos conceived with farm rooms lying behind them, and which terminate with structures like towers. Between both should have extended a closing wall with an entrance portal. The section in Palladio's plans (Vol. 3. Pl. 6. Bertotti-Scamozzi) gives us the 455 key to this explanation, but not to the arrangement of the gardens there. In any case as at the Rotonda, it was desired to have a free outlook over the surroundings from the porticos and loggias, and therefore high trees were dispensed with economically. Men also did not desire to conceal themselves here in shrubbery. On the other hand, I do not conceive the

great level front garden as graveled or as a lawn; and also that enclosed by the quadrant porticos. The site chosen by the owner recalls that arranged at the Rotonda by the architect, where just behind the residence the ground falls steeply. Burger (p. 150) must have represented the character of the architectural design in his birdseye view, if one omits from the representation the gardens and landscape.

242. Villa Badoero.

To the great example of Meledo the Villa Badoero in Fratta Polesine approximates in the general design and in appearance, with the omission of a domed roof. On the elevated plateau stands the master's residence, up to which lead dignified flights of steps. On its middle axis lies the hall to which are attached the side rooms. The middle portion is characterized on one side by a projecting portico adorned by a pediment, on the other side by an included loggia. Low porticos in semicircular form enclose the lower front garden, behind these being placed small farm courts and buildings (Fig. 371).

456 243. Villa Valmarano.

In a grander style and extending through two stories rises the loggia with columns and the principal facade of Villa Valmarano, adorned by a great pediment. Directly behind the loggia is found the hall, that is flanked on both sides by two stairways and small subordinate rooms. On the exterior these are treated as plainly as possible, but just in this way produce a quiet foil to the rich middle portion (Fig. 372). No now surprising motives are in these villa structures of Palladio, and still is the absolute rejection of all caprices, which was not always done with the old forms introduced. Yet certainly nothing but good. The same way is also still open to the moderns.

458 244. Hunting Villa La Magliana near Rome.

After urban and suburban villas are yet to be mentioned the hunting villas, that as a species were already known in the Roman region of the Moselle. Here it is the papal hunting Villa La Magliana near Rome, that interests us and is taken as an example. It was no splendid design for an expensive court life, but rather served the princely hunters and their attendants for a temporary stay. On a site of elongated form are enclosed a court, walls, living and service buildings, w

457 which are preserved for the greater part. The wall at the entrance side is still armed with battlements. The form expression of the residence is very simple; door and window enclosures are of travertine, the wall plastered, a rafter cornice with painted frieze, a triple arched portico with piers, above it being windows with stone crosses and the papal arms of Innocent VIII and Julius II. In the interior are tunnel vaulted larger and smaller rooms in two stories. The facade of the ground story is subdivided by Doric pilasters and blind arcades, above these being a continuous architrave, a high and plain frieze, that ends with a thin parapet cornice, on which directly stand the stone cross windows -- pleasing on the whole.

Fig. 373 gives the plan of the building after the beautiful drawings of the deceased architect F. O. Schulz, Rome, in *Zeits. f. Bauw.* 1895, with the addition of a good architectural text.

245. Garden, Park and Terrace Plans of Villas.

Garden, park and terrace designs with shady alleys, fountains, water reservoirs (collecting basins), cascades, grottos, ramps and flights of steps are designated as characteristic additions to Renaissance and Baroque villas, produced by inclined or terraced building sites, that extend to an elevated plateau with a beautiful and free point of view toward three or four points of the compass, generally then lost in an elevated forest. There the villa, i.e., the residence, as already stated, either forms the end or the starting point of the plan. In the last case, there is developed a front garden around or before the villa, then follows a middle garden with colonnades, shrubbery, artistic water works, on which open the garden salons; then the way leads over ramps and steps to the elevated garden, that finds its termination in the outlook plateau or ends in shrubbery and a park. That the villa forms the terminal point, then the gardens with all their artistic objects lie before it, as it dominates the outlook and is the highest aim for the occupants and visitors. (Examples; the Genoese villas). A third mode of arrangement is not excluded, where ornamental and useful gardens, residence and service buildings lie on the same level, such as the villas and gardens of the plain, as for example, the

460

case in Mantua, at Villa Ludovici, Vill. Borghese and Villa Pamphili-Doria in Rome, there in a moderately hilly country, in which the art is striking, with which the arrangement of a regular garden is connected with rural nature, which even forms a part of the arrangement. Likewise Villa Albani in Rome with its elevated and its sunken gardens must be counted here. These are symmetrical designs, yet without monotony. Serlio also makes suggestions for such (Fig. 374).

246. Show and useful Gardens, hedged Paths and natural Theatres.

In the Barocco period the useful garden was usually removed from view, and the development of artistic water courses on a great scale was added. The show garden stands in sharp contrast to the remainder. For indicating the service buildings a fir thicket is more generally preferred. The strong combined effect of the mass of the vegetation, its united effect with terraces, steps, ramps, etc., can first appear "when the garden is large and the esthetic principles of its arrangement are fully developed." (See J. Burckhardt, p. 244).

What we are surprised at today did not exist, even as little as the existing plants.

461 247. Cascade Scenery.

Instead of the show garden frequently appears later the garden architecture, for example, the race course (hippodrome) in Villa Borghese before Rome, the natural theatre in the Boboli gardens in Florence, adorned by niches and statues and furnished with stone seats. Then also great lawns with vases and statues, (Villa Pamphili-Doria, Rome); further hedged paths with hermes (Villa Medici, Rome), and stately alleys of laurel and cypress trees, detached groups of evergreen oaks between broad meadows, great avenues set with 4 to 6 rows of great shade trees (Villa Pamphili-Doria, Rome). Here should yet be mentioned the cascade scenery (Fig. 375), for example, as executed in the palace park at Caserta (begun 1752), and the flower beds with ornamental patterns, as well as the clipped box trees, interesting animal and human forms. If it be regarded at the same time as the problem of the art of gardening, "to treat artistically nature around our dwellings, and to adapt it to the refined needs of the residence, the impossibility will result, to describe the character of the Italian

Renaissance garden, without going into the general geographical and climatic conditions of Italy and the plants thereby required. (See W. P. Tuckerman, *Die Garten Kunst of the Italian Renaissance Period*. Berlin. 1884.).

What is offered to us in the garden designs of the old and new villas in Italy, on the lakes of upper Italy, on the Riviera, near Naples (Fig. 377; arrangement of Villa Nazionale), and in Sicily, forms a combination of the plants of the tropical South with the northern vegetation, it is the result of the acclimations of the most varied zones beside each other, what we should feel to be truly Italian. Mexico, Brazil, Africa, India, Japan, Asia Minor, America and Australia have bestowed opuntia cactuses, Indian figs, palms, oil plants, a aloes and American agaves, sugar cane, papyrus, rice, eucalyptus, cotton-trees, araucarias, etc. Likewise laurels, myrtles, orange, pistacio and olive trees belong to a distant native land. Plane trees were first introduced at the time of the republic in Italy, and must not be confused with maples, at least with the American, frequently employed in Europe for avenues bordered by trees. (See *Kulturpflanzen und Haustiere* in their transfer from Asia to Greece and Italy, as well as to the rest of Europe, by Victor Henn. Berlin. 1874). Cork and stone oaks, stone lindens, Turkish oaks, chestnuts, beeches, pines, firs and spruces, heather, lavender, rosemary, thyme, ivy, etc., are contrasted with those.

The old Italian Renaissance took its materials for gardening from the native plants, and therein lies the chief charm of its designs. The villas around Rome have still most faithfully retained their original character in the garden designs, such as stone oaks near Frascati (Fig. 378), pines and olives near Tivoli (Figs. 318, 319), and the cypresses of Villa Falconieri Frascati prove. Besides the cypresses of Villa d'Este, those on the ascent to San Miniato and Villa Giusta in Verona, those in Villa Falconieri have become famous (Fig. 333). The arrangement of this was conceived in 1546 by Cardinal Ruffini, the residence being designed and erected by Borromini. The building is animated in treatment, and in the upper story is employed the effectively arranged semicircular niche of B Bramante (Fig. 314). Its fame penetrated into German circles through Mendelssohn-Bartoldy, who purchased it in 1905, and

...the ... of the ...

...to give a view of the ... of the villa. (This ...)

...the ... the ... the ... the ...

...the ... the ... the ... the ...

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gave it to his majesty, the German emperor. On account of its location in the midst of fine groups of trees, should also be given a view of the porter's lodge of the villa, (Fig. 379), and for the same reason the enclosure of Villa Aldobrandini at the same place, on account of the clumps of trees. (Fig. 380).

Otherwise the gardens must likewise here follow the course of time, for only the living have rights! Yet what do the dead teach us?

248. Serlio and L. B. Alberti on Garden Designs.

Serlio. (Book IV, Pl. 198) is of the opinion, that gardens to some extent are also an ornament to the buildings, and he makes four suggestions for certain parts thereof, one of which is reproduced in Fig. 374.

Leon Battista Alberti approaches the subject somewhat more nearly in the book on the Art of Building, where he not only expresses himself on the plants and their uses, but also a little further on the purpose of the Villa, its equipment and treatment; also on the location of art objects in garden designs.

In Chapter 2 of Book IX, "On the adornment of City and Villa Edifices," he says to us, quoting Martial: -- (see text). Consequently a life of gormandizing! He requires the villa to be not far from the city, in a beautiful country and magnificent gardens, with sufficient land, meadows rich in flowers, open fields, in the shade of fresh forests with clear springs and brooks, supplied with everything, that pertains to the pleasures and needs of such a residence, open on all sides and good air. Square and circular rooms should alternate in the interior, and he desires convenient stairs for connecting the stories.

In Chapter 4 (Book IX);--"With what paintings, prints and statues, by which should be adorned the private house, floors, loggias, the other rooms and gardens") further good advice is given, from which we shall take only that on gardens.

Alberti desires the walks to be bordered by evergreen plants, box, bilberry bushes, laurel and ivy, with cedars and junipers, according to their sunny or shaded localities. He approves of a citizen of Agrigente, because he placed 300 stone vases and 100 amphoras in the garden. A grand ornament

would be the use of fountains. He further tells us, indeed
 465 for imitation, that the ancients protected their walks by vine
 trellises (pergolas), whose supports consisted of marble
 columns of the Corinthian order.

Rare and medicinal plants should be cultivated, and he pra-
 ises a custom of the gardener to plant the names of their mas-
 ters in letters of box (Pamphili-Doria, Rome); as hedges are
 mentioned rose hedges with pomegranate trees or cornel cherr-
 ies connected together; stone oaks, plum trees, thornbushes
 466 for meadows. (See text). They create meadows for the herds,
 shade for the masters! Statues, that incite laughter, but w
 hich must not be indecent, Alberti desires to have exhibited.

For the loggias of great men, he gives preference to the
 horizontal entablature (architrave, frieze and cornice), but
 small people should be satisfied with arches on columns. He
 wishes for villas and also for private houses, no pediments,
 towers or battlements. Galleries (attics) should be "graceful,"
 but not too large.

On the flora depends the fauna. One must also supply the
 native butterflies and leaf-gatherers what they require from
 nature, and plant the garden accordingly. The bird catenars
 alone have not ruined the gardens and grounds in modern Italy,
 and deprived them of singing birds. I have still heard many
 beautiful songs there, where the modern gardener has not come.

249. The Pergola.

The costly villa designs --, house, court and garden -- are
 mostly protected from intruders and unauthorized visitation
 by simple enclosing walls, whose internal sides are covered
 by trellises and shrubbery, or even by more richly treated a
 architectural structures, iron grilles and gates, artistical-
 ly and yet securely enclosed. (See the front gardens of the
 Barberini and of Villa Aldobrandini in Frascati, and other pla-
 ces. Many of these are creations of later date (Fig. 380), w
 467 hich in the front garden of Palace Barberini at Rome dates
 from the year 1866, according to my sketches).

A higher expression of architectural treatment is made by
 the shaded walks (pergolas) mentioned above, that are partic-
 ularly extensive at Genoese villas, and are artistically per-
 fected. A charming example is given by Fig. 381, the pergola
 of the Palace of Prince Doria, 426.5 ft. long and 16.4 ft. w

wide, which is attributed to Montorsoli. The fluted Doric columns are of white marble and support wooden rafters, that are covered by grape vines. The colonnades are interrupted by compound piers. Between these are placed beautiful ornamental vases.

468 More simply treated on the other hand is the entrance pergola of Villa Albani, but like the former is covered by a polygonal structure of rafters. Likewise gardens of monasteries are frequently finished with these shady promenades. (Certosa near Pavia and others with stone Doric columns and horizontal wooden beams. (Fig. 382).

250. Water Theatres.

Reference in this place should be particularly made to the semicircular "water theatres" in the grounds of Villas Aldobrandini and Mondragone near Frascati (Figs. 383, 384).

251. Casino.

Of the casinos or little coffee houses, buildings erected separately as small intimate structures, are to be mentioned as especially handsome works, those in Caprarola, in Villa Albani near Rome, the Casino in Padua and others in the villas of Genoa. That first mentioned merits full recognition on account of its classic simplicity, also in its facade. The great casino in Villa Borghese was previously mentioned (Fig. 387).

252. Bath Pavilions.

But besides these small buildings also occur yet others detached, the bathing pavilions, for which as an example may pass the charmingly painted one in Palace del Te in Mantua -- the little structure near the exedra of the garden.

In the French and German Rococo time, these play a greater part with the most splendid equipment of the interior, for example, in the pavilions in the palace garden at Nymphenburg near Munich and at Schwetzingen.

253. Garden Vases.

But Serlio also now gives us starting points for the form of vases, that are to be exhibited in the open air, and that have an important effect on account of their simplicity of form. He likewise gives rules for their construction (Fig. 389); Fig. 390 shows us a magnificent colossal marble vase from the antique Roman period, that indeed once adorned a st-

state garden as a public place, and was still exhibited in 1866 in the court of the Monastery of Ss. Apostoli in Rome, and must also have found indeed many admirers in the golden time of the Renaissance.

254. Garden Fountains.

Of its art invention, of good taste and correct understanding, for executing certain works of monumental and minor art, 467 proof is afforded by the small and moderately large garden or park fountains. Even the most extensive literature could not comprise everything beautiful and perfect accomplished in this by Italy in the Renaissance period. We must content ourselves with the statement, that not a park or garden design of that time can be conceived without such, and which are then transferred to the public squares and the palace courts of the great. Figs. 388, 391 and 392 may give starting points and at the same time the proof, that we still always depend on the good, old and beautiful in our art designing.

470 SECTION XV. THE HOUSES.

Home of the Artisan, Merchant, House with Shops, House for use or rent, simple House for rental, Filarete's House of Virtue and of Vice, Artist's House, location of living rooms.

"A very poor man is joyful, if only he finds a roof. In any case he is satisfied with a cabin 19.5 x 23.5 ft. without internal divisions."

Filarete's Treatise on Architecture. Book XII.

What Filarete here says was already true long before him, and will also be true still further, so long as poor devils are on the earth. In his ideal city of "Sforzinda" he also desires to furnish a home for the artisan, the merchant and the artist, and he establishes the following special architectural programme for the dwellings of these classes of occupations.

255. House of the Artisan.

For the house of the artisan is sufficient a ground area of 53.7 x 37.8 ft., where the end must be next the street.¹⁶¹ From this a passage leads through the ground story into the middle, where on one side is a workshop with storeroom behind, on the other lying the dining room. On the narrow little court behind the house is the shed for wood and chicken coop at one end, the kitchen with the vaulted cellar beneath at the other. If the building be erected in two stories, then in the upper story will be arranged in front a hall with a chamber, and two other rooms next the court. "Yet since by this arrangement 47.0 ft. in depth is required, then this story must project about 7.8 ft. beyond the lower one; this occurs next the street, so that the workshop has a projecting roof." Along the court side must extend a gallery, on which washed clothing may be dried. The garden must still have a depth of 39.0 ft.

Note 161. According to Engineer A. Tocchini, Milan, 1895 (Lo Metrologico Universale) (the Italian units of measure expressed in ft. are as follows:—

Braccio of Florence = 1.915 ft.

Braccio of Milan = 1.952 ft.

Braccio of Modena = 2.078 ft.

Braccio of Pavia = 2.037 ft.

Palmo of Naples = 0.2645 m.

Palme of Palermo = 0.2580 m.

One braccio of Rome = 3 palmi of Rome = 0.670 m.

Since Filarete is silent concerning the stairway, it may well be assumed, that he placed no great weight on its treatment, which may also be justified by the small proportions.

256. House of the Merchant.

The house of the shopkeeper Filarete already conceives as somewhat more important, for he first assigns it a larger site of 98.0×298 ft. He recognizes a forecourt, enclosed by a colonnade next the street, bounded on two sides by wings and on the fourth by the dwelling. Before each wing is placed a colonnade for display of wares; behind these must be found writing and sales rooms, as well as storerooms.

471 He likewise places a columnar portico before the dwelling, through which a middle passage leads to a second court, which is only separated from the garden by a colonnade. In this second court the side wings contain in the ground story servants' rooms, kitchens, bakeries, etc., while only the main building has a cellar beneath it, in its ground story being provided a hall and two rooms for guests.

In the second story is then found a hall with a room at each end; of similar plan is the story lying above this. The second stories of the wing buildings each contain two chambers. The flat roof of the portico on the street serves as a balcony, and is occupied by fragrant plants. "Care is to be taken for conveniences of all kinds," whereby indeed is also meant the stairs, about which Filarete also says nothing here. The main doorways and the windows take the proportions of 1 to 2, the others that of 1 to $1 \frac{1}{2}$.

The design with the forecourt, the display of wares, the balcony covered with flowers, the location of the dwelling retired from the street traffic, the variation in height of the different portions of the building, are indeed charming things; but that a merchant of the middle class ever built thus, can scarcely be assumed.

We further know, that the great merchants and manufacturers were not satisfied thereby (see the Medici, Rucellai and others), and that small dealers lived near the great in rented 472 houses, exactly as in classic antiquity and as still today, just as we know.

Where possible in any way, for house like palace architecture the plan of the antique house was taken as a basis, and the same ingenuity in holding fast to the basal idea on an irregular site, for example in Pompeii, also appears in the time of the Renaissance.

A little court with or without passages and a good stairway are again found everywhere, when the rooms next the house were rented for shops or were used as stables, carriage rooms and the like, as this is shown by the ground plans of dwellings in Via cinque Lune, on Place Madama and in Palace del Bufalo in Rome (Figs. 395, 396).

An omission of the court was attempted by Bramante at the five story house in Via del Governo Vecchio at Rome (Figs. 393, 394), where the site must be utilized to the extreme, and which gave opportunity for an unusually high building in stories, in proportion to the dimensions of the ground plan.

257. Dwellings with Shops.

The merchant's house, or better said, the house with shops found its definite architectural expression in some Roman palaces and dwellings, where to the shops almost always was added a half story, that served for storerooms or as a rented dwelling for the dealer, while in the story above this, "the noble story," first commenced the residence of the owner.

473 A noble example of this kind was given by B. Peruzzi in his Palace Costa in Rome (Fig. 397), where the openings to the shops yet show the moderate clear width of 7.3 ft. with a low height; for the horizontal covering the preference was given to the straight arch -- entirely after the antique method.

An allied solution is shown by a house in Via del Governo Vecchio, likewise in Rome, but on which the openings to the shops are made wider (Fig. 399).

The endeavor to make the stall as wide as possible in the time of increasing wealth with increasing activity of the dealers, and the growing endeavors to attract the buying public, already existed as today, and it then as now found its special expression on the facade. Shop openings of nearly 13.2 ft in clear width, covered by loaded horizontal ashlar arches are also quite conspicuous in our time, in which houses with shops have the house set on "stilts", and the great openings in the masonry facade in the ground story are omitted; but

they are still acceptable and do not lose the static feeling, since they are again separated by bold rusticated ashlar piers, and also the upper limit still retains the character of strength and firmness.

What may be dared with well constructed and correctly calculated horizontal arches up to 12.0 ft. span is shown by Fig. 399, where the middle is loaded by the window pier extending through all the stories, and also by Fig. 400, Palace Nicolini. Giulio Romano adhered to the but slightly less clear width of 11.1 ft. for shops in his Palace Cicciaporci in Rome (Fig. 401), and as better after the antique models (Theatres in Farento, Taormina and Rome) to relieve the horizontal arch by one of semicircular form, including the mezzanine window within this as an effective architectural motive.

258. House with Shops with the Master's Dwelling in the upper Story.

Rapnael proceeded similarly with his own house in Rome, where the shops and the mezzanine were externally combined into one story. Above the rusticated facade constructed of bricks and stucco rose the palace architecture of the upper story, animated by coupled half columns with its Doric main cornice. Aside from the deception in the building materials, we have to do here with a composition, that also strikingly expressed its purpose externally (Fig. 402).

259. Dwellings and Houses for Rental.

Besides the business houses for artisans and shopkeepers were erected dwellings or houses for renting to officials, artists, learned men, small renters, etc., either as necessary structures of the usual type or as artistic buildings with the cooperation of architects, where the best efforts of the trade were not lacking to these works, and it was sought to win for them an artistic appearance.

The House of the notary Sander in Rome, like most of this kind, built as a house with three windows, gives evidence of this and the proof, that even a dwelling may become a monumental art work, if one proceeds with earnestness, spirit and taste. The good proportions of the windows with their beautifully moulded enclosures and the splendid sgraffito friezes below the window sill belts, the finely considered contrasting effects of openings and masses here create a model and are

faultless, but still artistically important facade of a dwelling.

Charming examples of such houses with three windows are given with a somewhat greater expenditure by the facades of the so-called palace Serristori in Florence, built by Baccio d' Agnolo, and those of Casino di Livio by Buontalenti there (Figs. 403, 404), where the overrich ornamentation of the Early Renaissance is avoided. Buildings are never finer than their occupants.

The so-called House of Palladio in Vicenza, I likewise reckon with these happy creations. In this place must also be mentioned the little houses indicated by Burckhardt; ¹⁶² that not far from the Basilica, built about 1481 and still half Gothic, on which is visible the motto:-- "No rose without its thorn"; Then House number 1944 with the motto:-- "All things pass on, return, nothing is lost"; and number 1276, "as a remarkable attempt to be monumentally imposing in even the smallest dimensions".

With reference to Burckhardt's "Cicerone" (edition of 1860) are still to be mentioned:-- in Padua, the so-called House of Tito Livio (Palace Cicogna), a small building; in Ferrara, the simple House of Ariosto (Strada Mirasole no. 1208); in Bologna, the capriciously beautiful corner House No. 496, Via delle Grade, and different ones on Place S. Stefano; in Bergamo, House Caffei with its elegant little court (Fig. 406), that is surrounded in the ground story by a colonnade with architraves, in the upper story by an arched portico, and also in Bergamo, the House Fogaccia, a three story building, the stories subdivided by pilasters, the uppermost story characterized by a loggia. ¹⁶³ This House is located at No. 11 V Via Gaetano Ronzetti, is of dark marble with inlays of red Veronese marble disks, recalls in details Palace Comunale in Brescia, and is of extraordinary beauty with the most refined profiling of the cornices. Sometime since a restoration was undertaken, and after the completion of this, it may be taken as one of the most prominent private buildings in upper Italy.

478 In the narrow street the chosen palace motive for this house with three windows is not disadvantageous. This building of small dimensions also has an entirely monumental effect. As architect is designated Pietro Isabella, called Albano.

Note 162. In *Der picerone*, etc. 1st edition. Poole. 1860. p. 224.

Note 163. Those houses at Bergamo, as well as those following in Brescia and Milan are published in Paravicini, T. V. *Die Renaissance architektur der Lombardei*. German edition by R. Keppel. Dresden. In giving names of streets and numbers of houses it should be noted, that these also in Italian cities are subject to constant changes, and therefore statements in this respect are not always reliable.

Bergamo contains in its older portion an abundance of small houses of all kinds and of all phases of Italian Renaissance art. Charming ones are furnished by the transition style with trefoil windows in the upper stories, beneath these being continuous painted friezes with foliage, medallions and cupids. Interesting appear some houses on Via dell'Arena in the vicinity of the Cathedral, with entirely painted facades. The ground story with ashlar painted gray on gray, in the upper stories being simple rectangular windows on continuous window sill belts, the window enclosures also particularly accented by paintings, the wall piers animated by painted figures in niches between painted columns, where the figures are yellow as well as the capitals, the shafts of the columns treated as if made of variegated marble, and beside them being painted loggias with rich perspective views; we further meet with half timber houses on a stone ground story, the external walls of the upper story resting on projecting beams with wooden caps, now plastered white on the exterior, formerly indeed exhibiting the wooden framework, the example of a half timber house built at the foot of the Alps under Swiss influence, without any art forms. Then we enjoy the interiors of such houses with the charming little courts surrounded by arched or horizontally covered porticos in the lower or upper story, often picturesquely overrun by green vines and adorned by brilliant flowers. They are dwellings of modest style but are charmingly beautiful. (Figs. 405, 407; little courts of houses at Nos. 72 and 104 Via Pignolo in Bergamo).

But this external colored ornamentation must also not be forgotten on dwellings in Vicenza. One first learns from this point of view to first correctly appreciate and understand the master Palladio in his simpler creations. His small House

with two windows indeed has something strongly classical in effect in the drawing; but one thinks of the added color decoration, that may well be restored from the vestiges on the building; the shrine between the Corinthian pilasters of the upper story contains a large figure composition painted in fresco with bright colors, and similarly the rectangular area above it in the attic story, the little windows beside these surrounded by cartouches and grotesque ornamentation, the parapet frieze beneath and likewise adorned by paintings, as well as the simple and great rectangular windows also surrounded by paintings. The same complete ornamentation of the facade surfaces was also borne, according to the still remaining vestiges, by other palaces of the same master in the city, now appearing to us as too dry or too simple, which could only be correctly understood and judged with this ornamentation.

In Brescia is to be mentioned the three story House Bolognini with beautiful portal, rectangular windows and peculiar lacework and ball ornaments on the surface of the facade in the third story, in Milan a House in Via Torino with a pretty columnar court and the broad window enclosures characteristic of mediaeval buildings in Lombardy; the House Salimbini in V Via Torino there with a three story and interesting columnar court, and also finally the court of H. Taverna, beautifully painted by Luini, of which a colored drawing is reproduced in the work mentioned below. 164

Note 164. Gruner, B. Specimens of Ornamental Art. London. 1850.

260. Simple Houses for Renting.

But also the simplest houses in blocks, as they stand closely adjoining each other in Tuscan cities, there is given in Fig. 408 an elevation after a drawing in the Uffizi. A closed ground story with a great doorway and mezzanine windows, simple window sill belts, on which stand the round-arched windows, subdivide the height of the facade; projecting rafter cornices terminate the building at top. On one of these houses the owner has made himself known by his family arms. A uniform construction of the street facades has been avoided, as in all times of great prosperity. Men would enjoin no rules on the different ones, or apply force architecturally. for the combination of dwellings into a deceptive and united

whole, as attempted in the last half of the last century, and also somewhat earlier everywhere in Europe (Messina, Turin), was not a happy inspiration. In Figs 409 and 410 are given two street views after a painting of Mantegna in the Eremitani at Padua and a fresco of Ambrogio Lorenzetti in Siena; now many others appeared is shown by the pictures of theatre cities in Serlio for the comic and tragic scenes. (See sheets 49 and 50 of edition of 1584).

261. Filarete's House of Virtue and Vice, and House of Onitoan Noliaver.

Finally should be given also a word on Filarete's "House of Virtue and of Vice" and the House of the architect Onitoan N Noliaver. 165

Note 165. By transposition of the letters in the name of Antonio Averlino. See Book XVIII of the Traktate.

When Filarete commences the description of his houses thus:-- "The House should properly have the complete form of a hill; but since it must be habitable, it is built in stories," this may suffice, and when he provides in the House of Vice besides brothels, drinking saloons, cook-shops, gambling halls and women's rooms, also for police soldiers, with the reason that vice requires a cure, and that too great scandal must be atoned for by prison and other punishments, then is this a good measure, and when over the House of Virtue rises a dome supported by the nine muses, and crowning the whole is the figure of Virtue, -- a form in armor with a countenance like the sun, standing on the apex of a diamond, with a laurel tree and a date palm in the hands, a fountain of money at its feet, from which bees sip, as difficult of access as Parnassus, and furnished with a gushing fountain like Helicon -- this leaves scarcely anything to be desired in the grandeur of the idea(!?).

But in the precinct of the "Houses of Virtue and of Vice" the peculiar and wonderfully ornamented "House" of the builder of all great works of the city" has also found its place. In regard to the magnitude of his artist's home was he modest, since he built on only one-third of the area, leaving the remainder as a garden. Before the house he placed a portico with four arches; on the right and left of a middle passage was a room; the passage itself led into a columnar court with porticos, at the back of which was a building with two stories

with an air. The lower story contained two rooms, one of which was a kitchen; in the upper story were two rooms, one of which was a bedroom. In the third building were two rooms, one of which was a kitchen, and the other a bedroom. The entire complex was surrounded by a high wall and a moat.

A single building, known as the "Dormitory," was situated to the left of the main complex. It was a long, narrow building, and was used for the accommodation of the soldiers. The building was surrounded by a high wall and a moat.

In addition, an extensive fortification system was built around the main complex. This system consisted of a series of bastions, ditches, and walls. The bastions were built on the corners of the main complex, and were used for the accommodation of the soldiers. The ditches were built around the main complex, and were used for the purpose of defense. The walls were built around the main complex, and were used for the purpose of defense.

The fortification system was built on a hill, and was surrounded by a high wall and a moat. The hill was used for the purpose of defense, and was surrounded by a high wall and a moat. The hill was used for the purpose of defense, and was surrounded by a high wall and a moat.

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with an attic. The lower story contained two rooms, separated from the garden by a passage; in the upper story were found a hall and a chamber. In the front building were two upper chambers, above these being a great hall, that occupied the entire interior. The garden contained a fish pond and was surrounded by offices and stables.

A slight peculiarity should be mentioned; "Over the doorway and in the court Onitoan had been permitted to add his portrait with an inscription in his honor; also the allegory of virtue and vice devised by him, imagination, and reason, fame, remembrance and intellectual endowment."

In antiquity, in gratitude for the success of his statues of the deities, Phidias was accused of theft of gold; an imperial amateur had the head of Apollodorus struck off; in the middle ages the devil took charge of the artist, who had completed a great work; in the Renaissance Sansovino was imprisoned, punished by a fine and deprived of his honorary office, because a portion of his wall fell; Peruzzi died in poverty; Borromini took his own life; in spite of his numerous buildings, Palladio never prospered; Titian became a rich man by his traffic in wood, but not by his art -- and Filarete deluded himself in the thought of higher honors, than were ever paid to any artist, for what he had done wrong in spirit!

Raphael, Bramante and Giulio Romano had their own houses in Rome and Mantua. a modest house was erected for himself in Vicenza by Palladio (if this be true); Salvator Rosa occupied a charming little house in Rome (Fig. 411), and that occupied by Michelangelo at the foot of the Capitol (Fig. 412) was not large, according to the plan, and Ariosto inscribed on his house:--

"Small, but fit for me and obnoxious to none, yet not

Mean, my portion, but not a name in the air."

None have been too comfortable.

262. Location of the Living Room.

Leon Battista Alberti in his fifth Book ¹⁶⁶ also speaks of the location of the living room in the house, wherein he is so reasonable, that he does not establish any generally applicable rule for this arrangement according to a definite point of the compass, but rather makes this dependent on the nature of the site and the ventilation of it.

Note 166. Chap. 17. p. 124. (See text).

After a lengthy treatment of the chimney flues, he requires the kitchens to be placed so as not to offend the guests directly; but they should be so located, that in carrying the food, this should not come to the table when too cold or too hot, and also so that the use of roasting pans and basins by the kitchen maids cannot be heard during meals. The room of the mistress should be so arranged in the plan, that what every person is doing in the house may be overseen from thence. Man and wife should each have a separate room, so as in the case of sickness and the like to not annoy each other. Each of these rooms should have a separate entrance and also a door connecting both, so that the mistress may privately visit the master. Beside the room of the mistress is required a room for clothing, and a similar one for books near that of the master. If an aged father of the family be in the house, then must be provided for him a warm room with a stove (caminetto), and beside this a room for articles of value. In the latter might also be placed the sons and daughters in the room for clothing, beside this being a bedroom for the children's maid or nurse. Rooms for strangers are to be arranged in the vicinity of the corridor, and in their vicinity a room for resting and for receiving articles of value. Their location near the entrance makes it possible for the guests to receive visits without causing disturbances in the house. Opposite the strangers' rooms are to be placed the rooms for youths of 16 or 17 years of age, or at least not far from them, so that they may cultivate friendships and stay with the strangers. Beside the room of the young master is to be provided one for weapons. The rooms for the maids and servants must not lie too far from those of their masters, so that they may always be at hand for service, horse-boys on the contrary, should sleep in the stables.

These views are also still valid on this side and beyond the Alps.

In conclusion may be mentioned further a kind of houses, that neither represent palaces of the nobility nor business houses, but are rather intended to receive men of different callings and accordingly exhibit a particular stamp on their street fronts. In the lower story of these and in a mezzanine

above it are arranged shops and workshops, in the upper stories being the dwellings of the so-called masters, and which is in general skilfully expressed architecturally. The lower story remains simple and plain, the upper stories are splendidly or gracefully subdivided and with greater heights of stories, as suitable for a prominent man. There the parts may be so distributed, that the business man or the nobleman may be the owner, when one rents to the other.

485 This compromise architecture of that time had one merit, in that then these palaces for renting were not scandalized by the signs of firms in great colored letters, that covered all free wall surface from the sidewalk to the roof. What will architecture do under such circumstances? Is it still worth the trouble to strive architecturally on account of such wretched work? Certainly not. Here the modern time works without a model -- thank God -- otherwise one might give up the study of old architectural styles. The simple dwellings of the Renaissance in Italy are mostly stucco or brick structures, rarely constructed in moulded cut stone, simple, yet not wretched. Stucco and painting must frequently assist the flat architecture and often its members. But in respect to form it corresponds to the style changes just as well as the monumental buildings, but in a somewhat less striking manner, as shown by the comparative collection from the different periods and various places; for example, according to Fig. 76 on a Milanese house of the Sforza period, where granite columns, painted stucco and plain brick surfaces alternate with each other, and where the termination at top is effected by a rafter cornice. We see the same on a brick house from Bologna (Fig. 75) and on two Roman houses from the time of Bramante and Vignola (Figs. 413, 414).

Fig 415 gives the frequently described palace-like House with three windows of Baccio d'Agnolo in Florence (1520), half dwelling and half palace, later arranged as an inn (Locanda del Nord), now somewhat improved, but still such an interesting example of how high the idea of the facade of a house might and should be carried. Quiet and rich but without overloading, it was completed four years after the death of Bramante. The rectangular windows with severe pediment caps animate the surfaces, and instead of vertical subdivisions occur

flat recesses and semicircular niches. The pediment caps mentioned stand directly on the cornices with free ornaments, and to which reference has already been made. On account of the early occurrence of this kind in the Renaissance, there may still be mentioned an example little considered elsewhere, that indeed never has stood before us as an architectural structure, but has been preserved to us as a sculpture (Fig. 4 416). On the altar of Petrus Marcellinus in Cremona, chiseled from marble by B. Briosco, we find the representation in relief of a two story palace facade, recalling the manner of Alberti, that shows how far certain motives of the Lombard architect Amadeo coincide with those of Bramante, since Briosco was employed from 1481 onward as assistant to Amadeo, who himself worked again in 1466 on the Certosa near Pavia, while Bramante was first called to Urbino only in 1468. (Also see collezione di Monographie Illustrate: Painters - Sculptors - Architects. C. A. Amadeo, sculptor and architect, by Malaguzzi-Valeri. Bergamo. 1904).

Before entering on the consideration of the different structural parts and of the internal treatment, I may yet recall a classification of the great architectural epochs of the Renaissance by Letarouilly, that has much in itself, even if it was also particularly established for the buildings in Rome. Generalized, it can be used for the possibility of a rapid determination. (Text, p. 131).

List of principal buildings of modern Rome according to Letarouilly.

- a. Renaissance. First epoch. Foundation of S. Maria dell' Anima. 1400.
- b. Second epoch. Foundation of Basilica of S. Peter. 1506. (Bramante). Until Palace Conservators on the Capitol. 1542. Michelangelo.
- c. Epoch of transition to the decadence of 1561 until;
- d. Decadence of 1602.
- e. Epoch of imitation and of indecisive theories from 1700 until 1831.

Banks and warehouses in the great style are brought down to us in the Bank of the Medici in Milan and in the Fondaco dei Tedeschi in Venice, the Warehouse of the German Merchants. These were structures like palaces with rich painted and scul-

sculptured ornamentation, built architecturally symmetrical, and indeed no bazaars for everybody, with the goose-pen motives of our modern warehouscs (department stores).

SECTION XVI. DETAILS AND INTERNAL FINISHING.

Plinths, Belts, Main Cornices of Wood and Stone; Corbel-
ling of Stones; Windows, Entrance Gateways, Niches, Balconies,
Bay Windows, Loggias, palustrades and Attics; Pediments and
Belvederes; Chimneys; Dormers and Roof Coverings; Heraldic Or-
naments and Metal Decorations.

Even if certain details of palace, villa and house architec-
ture were necessarily touched on with the different kinds of
buildings, and this must be so, yet a systematic comparison
of these cannot be entirely omitted, particularly since for
the manner of their artistic treatment in many cases, the ma-
terial employed is determinative; for example, whether natur-
al stone, bricks, terra cotta, wood, plaster or stucco was u
used in construction, which can only be described here in de-
tached cases. Also the derivation of certain parts from the
works of past times can be more closely examined here.

263. Plinths.

A separate base in a more or less developed form, height a
and projection, belonged to any artistic building in all tim-
es, whether it was a fully developed stepped structure, as on
Grecian temples, or a triply divided substructure, as shown
by Roman temples (Maison Carrée in Nîmes), or by the slight
projection of a course of high slabs set on edge, as for all
walls of Doric temples, without any further addition of moul-
dings.

This last form was preferably followed by the Renaissance,
where narrow streets forbade a bold development of the plinth,
or where the nature of the material close to the pavement ap-
peared to make it unsuitable. Thus the brick buildings of B
Bologna frequently lacked a plinth of any artistic form: the
brick walls rise vertically to the first window sill belt (Pa-
lace Garracci in Bologna), or a plain slab plinth was construc-
ted of natural stone, thereby keeping the bricks from contact
with the sidewalk.

264. Plinth in two or three Divisions.

On Palace Serristori in Florence the wall ashlar with boss-
es begin directly at the sidewalk; Palaces Torregiani and Q
Quaratesi in Florence, Versopi in Rome and others have plain
and slightly projecting plinths; Pandolfini and Pitti show a
division into two parts, i.e., above the masonry rising from

the ground is a plain or moulded covering belt; palaces Strozzi, Bartolini and Guadagni in Florence and Bevilacqua in Bologna have the bench plinth already mentioned (Figs. 417, 418, 419); Rucellai in Florence and Piccolomini in Pienza also have the neck connected therewith, bordered by a special belt. (Palace Rucellai in Florence, Fig. 240).

The antique Roman triple division of the plinth was first adopted by Bramante in the most beautiful way on the structure of the cancellaria and on Palace Giraud in Rome, which have remained as models for the later time. Base, dado and cap together form the plinth of the building, first expressing at a small scale what is expressed on a large one on the entire building by its triple division into plinth, vertical wall and roof cornice (Fig. 247).

265. Belts.

Window sill belts and story belts subdivide horizontally the vertical masonry of the structure in its height, the first of these being usually made less bold and less strongly projecting. Florentine palaces and houses of the Early Renaissance all exhibit, as already stated, according to the mediaeval custom continuous window sill belts, moulded similarly to antique impost caps, on which are directly placed the window enclosure. They mark on the facade the height of the window parapets, which certainly do not always correspond in those common windows. Steps arranged in the recesses of the jambs only bring the occupant high enough for him to look over the window sill belt down upon the streets (Fig. 25).

When the height of the story from floor to floor is indicated on the exterior, thus not from window sill to window sill, then appear plainer cornices at the height of the beams, frequently accompanied by frieze and astragal (for example on P Palace Farnese in Rome). But also both belts appear together on the building, if the horizontal is to be still more emphasized, when the story belt becomes a base for the window parapet, which then consists of the base, the parapet slab and the continuous window sill belt, but then returned.

But the stories were also characterized by another kind of horizontal subdivision, equally whether a vertical division by pilasters of the different orders existed or not, when the antique members -- architrave, frieze and cornice -- extend

on the facade as window parapets (Palace Rucellai and Palace Larderel in Florence). If bricks were used instead of cut stone, then the projections were diminished in accordance with the material; the power of expression is lessened, the love of ornamentation appears in the foreground, and also the customary antique members are omitted (Palace Fava in Bologna).

266. Main Cornice.

The upper termination of every building is formed by the r roof or eave cornice, whose form, size and projection in esthetic respects indeed first depends on the entirety of the structure, but also is chiefly determined by the material.

267. Wooden Cornice.

The oldest are constructed of wood, and are composed of the uppermost ceiling beams and the rafters of the roof. They best fulfil their purpose of affording protection and shelter to the lower parts of the building against sun and rain. The great projection, often more than 6.6 ft., beyond the plane of the wall was more rarely made possible by oblique struts under the rafters, as on mediæval house architecture on this side of the Alps, but by variously combined wooden caps or c corbels below the rafters. Cornice supports of inclined struts are to be found on the peasants' houses of Altepiani d' Abruzzo.

268. Cornice of Cut Stone.

The projection of eave cornices is limited by the use of sandstone or limestone. In order to not have to construct the walls of disproportionate thickness, the Renaissance frequently adopted the expedients, frequently too very artificial, in order to arrange the greatest possible projection. (See cornices of Palace Strozzi in Florence and Palace Pillo- lomini in Siena). In regard to form, they generally adhered to the antique console cornice, thus bearing in mind the ancient ratio of 1 to 1 of height to projection, employing consoles sometimes in simple form in the frieze, sometimes in richer form beneath the coffered cornice slab. The cornice was then accompanied by frieze and astragal beneath, or by frieze with architrave, according to the subdivision of the facade surface.

269. Brick Cornice.

If bricks were adopted for construction, then what has been

said for eave cornices remains true for belt cornices of brick. The projections are reduced; the ornamentation by relief and colored ornaments must offer a substitute for the lack of energy.

270. Cavetto Cornice.

The Egyptian style is almost recalled by the great cavetto cornice, which is constructed of wood, reeds and mortar, and whose monumental model must indeed be sought on the facades of the Early Christian basilicas of Rome. In connection with lunettes and colored ornamentation, they produce a charming decorative crowning of the building, as may be seen on many Lombard structures, with the most beautiful on the bridge-nose of the Certosa near Pavia and on Bolognese palaces. (Figs. 118, 119, 120).

271. Corbelled Stories.

The mediaeval corbelled story, where no words were lost on the construction, does not absolutely assume half timber construction, to which was indeed devoted no consideration in the cities of Italy. Already in the middle ages ¹⁶⁷ men employed monumental structural materials, in order to still secure a relatively wide street for traffic without loss of area for the dwelling, the compelling reason, that in cities with increasing population and closely drawn walls forced the building of crowded and lofty structures in stories.

Note 167. See Pisa, Florence, Siena, etc.

There the corbelled facade walls rested on stone corbels, which were connected by arches, where was received the aid of bricks or of cut stones, according to whether the locality concerned preferably offered either material. Thus for example at Bologna, on its Palace dei Carracci by the use of ordinary bricks and without the use of any art form were built projecting corbels, capped by stone imposts and connected by small semicircular tunnel vaults, which are richly moulded on the front ends and have ornamented arcnivolts; above these then commenced the plain coursed brick masonry (Fig. 80).

At the same place in the court of Palace Fava, the tunnel vaults are set on massive richly decorated consoles, that support a continuous gallery (balcony), but which (according to Filarete) was not intended for drying linen.

In Florence, men adhered to the mediaeval mode, only for

tunnel vaults replacing the pointed by the round arch, or built with ashlar consoles. Very beautifully executed with solid consoles of artistic treatment (volute corbelling and flat ornaments in the spandrels; Fig. 420 D) is the corbelling on the facade of the Inn "Ginevra e Porta Rossa" in Via Porta Rossa in Florence. On a house in Via dei Michelozzi near S. Spirito the consoles for the upper story project 4.9 ft. from the face of the ground story, they are composed of 4 courses of ashlars, set 5.9 ft. on centres, and are vaulted by round arched tunnel vaults (Fig. 420 A). For greater projections, where the consoles are constructed of relatively smaller stones, the ashlars are frequently displaced; such consoles were later connected with the strong masonry of the lower story by visible iron bands. On some simple houses of the early period in Via del Mercantino, we also find the consoles connected by segmental or pointed arches.

A wooden construction entirely translated into stone, in which the horizontal corbelled beams are formed like architraves and are supported by stone struts 6.6 ft. long, resting on corbels, where the supports lie 7.2 ft. apart and only support tied tunnel vaults at the ends, are shown by a house in Via Toscanella (Fig. 420, B). I mention only these few characteristic examples, although many similar ones may still be found in the city.

The old painted House on Place S. Croce (Palace Antella), whose original plan is found among the drawings in the Uffizi as a permanent exhibit, shows a stone beam construction without arches, i.e., one with horizontal lower beams, where the corbels are 8.6 ft. on centres and stone struts over 6.6 ft. long with a section 1.13×0.85 ft. are employed. ¹⁶⁸ (Fig. 420, C). Thus perhaps Filarete conceived the corbelling of his artisan's house to be constructed.

Note 168. Similar constructions with straight stone beams and struts are on the projecting structures of Ponte Vecchio in Florence and elsewhere.

Another mode of supporting corbelled stories, that produces an effective architectural motive, is found on a row of houses on Place delle Erce in Verona (Figs. 420 E and F, examples from Bergamo), where instead of the struts are arranged vertical free supports in the form of columns.

272. Windows.

What antique art and indeed also the middle ages created in forms of windows, we find again in the Renaissance under certain modifications. The new was adopted, but as translated into the form expression of the Renaissance. The basal form is often still Romanesque and Gothic, but the details are like the antique. The horizontal lintel, the semicircular as also the pointed or segmental head were retained; a new form was scarcely added to these; trefoil, foiled, ogee, curtain or dropped arches as the internal form of the window remained mostly foreign to the style, but are not excluded. (See buildings in Padua, House Olzignani). A kind of curtain arch is found on Palace Montanari in Vicenza, others on the portals of S. Agostino in Montepulciano, on the Confraternita in Arezzo, on the facade of the Palace in Urbino, etc.

47-
493 The coupling of single windows, their enclosure by a great arch and their combination into a whole were doubtless taken from the preceding art period, as well as the horizontal spanning of the stone cross window within the enclosure (Rome and Florence; Palace Venezia and Palace Gondi). The window enclosures generally have the form of an upright rectangle, from which however variations are not excluded. The ratio of width to height in the clear varies between the limits of 0.5 to 1, 1 to 1, 1 to 1 1/2, up to 1 to 2 and beyond (Figs. 421 to 425).

273. Enclosures.

The enclosures of the window openings occur in the simplest manner by a uniformly moulded band extending around it, membered like the mode of the antique architrave (ground story windows of the Florentine palaces of the Early Renaissance), or the lower part of the enclosure is cut off and replaced by a separate window sill belt, where the moulding reappears. Likewise the enclosure with the so-called ears on the lintel with jambs either slightly inclined or accurately vertical as after the antique model still remains in use. Repeating the ears at the bottoms of the jambs is likewise not excluded.

274. Ornamentation.

The enclosure is enriched by a frieze and horizontal cap above the lintel, where also ornamental decorations might appear over the latter (Figs. 426, 24 a, b) in triangular or seg-

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segmental pediment forms. More expression is secured by this addition with the arrangement of consoles at the right and left of the lintel, that support the cap and which frequently are continued as bands along the jambs. The enclosures are richer, if to the jambs and lintel are also added pilasters, half or three-quarter columns or even full columns, which then bear a complete antique entablature with or without pediment (Figs. 427, 428).

494 Broken or divided pediments belong to the Late Renaissance and the Barocco style, ogee ones to the time of Bernini and Borromini. Returns restricted to the entablature and leaving the pediment unbroken are likewise a form of the late time, but are ornamented by shells or cartouches with good effect. (See the windows of Palace Conservators in Rome). Instead of pilasters also occur herm piers and lions' heads diminished downwards, as on the windows of Palace Cucoli, Via de' Servi in Florence, above being broken cornices or female heads with busts, as shown in a charming manner by a window in Via Ginori in Florence.

495 275. Windows with semicircular Heads and coupled Windows.

The semicircular headed windows of the early time departed from the antique in the form of their enclosures, they either exhibit the wide ashlar enclosure with outer raised (eccentric) round form or the pointed form with the peak at the crown, and also plain, moulded and decorated bands form the enclosure (Figs. 422, 429). The coupled windows of this kind have either the same bold ashlar enclosure, which is fitted with small piers and architraves, above which then rises the small round arcades with a perforated tympanum slab, or instead of the dividing pier appear slender little columns and narrow pilasters at the jambs, that receive the architrave and arch, where the enclosure is arranged in the ashlar work. A beautiful and rich form is shown by a double window recess in the court of S. Pietro in Perugia (Fig. 425), where the finest antique details attain to their full rights. The archivolt membering of the double window and of the enclosing arch are entirely carried down to the window sill as the enclosure.

The arrangement of the great arched windows on Florentine palaces (Strozzi, Riccardi, Rucellai) has already been illustrated and described in the text, so that only a reference to

the details alone remains, which is shown at larger scale in Figs. 240, 241, etc., in what manner the arch members intersect, and how the arch spandrels are filled, where they are not perforated.

276. Construction of the Windows in Brickwork.

Beautifully treated are these window motives on the brick buildings of the Early Renaissance in Lombardy and farther south to Bologna. Not easily are found elsewhere more charming and luxuriant details than here, where also the treatment of the ground form of the window experiences a change, so that the middle support often gives place to a free ending in form of a console. A characteristic peculiarity remains there in the impost and apex acroterias, frequently at large scale, but always finely detailed. The Houses Vecchetti and Carracci, Palaces Pallavicini (now Felicini), Fava and Bevilacqua in Bologna present charming examples of this playfully decorated brick architecture. But still more richly, Filarete and his colleagues or followers on the Hospital Maggiore in Milan have shaped its pointed double windows, with the use of marble and of terra cotta. Here the brick arches of upper Italy besides the Bolognese celebrates real triumphs, which relate to composition, forms of details and technics. The magnificent wide enclosures with the cupids climbing vines, the fine accompanying bead and egg mouldings, together with the monumental filling of the arch spandrels with vividly modeled busts, the moderately slender marble shafts of columns supporting the double arches, produce a precious architectural representation in enclosures by colonnades and blind arcades of the facades.

277. Enclosures of Double Windows by Pilasters and Entablatures.

But a still more magnificent effect was produced, when these coupled round-headed windows were enclosed within a rectangle formed by an entablature supported by pilasters or columns, to which could be added pediment caps. (See School S. Rocca in Venice, Fig. 430).

278. Window of Sansovino.

Decidedly more charmingly are developed the forms of windows, when the masters returned to late Roman models, and transformed these into splendid works of the highest rank by their

defined space, with heavy overhanging thin plates, whose rim-
the wall was round-arched and the arch above was surmounted by
a small square tower. The tower was built of brick and was
faced on the outside of the window in brickwork, and within the
opening in the doorway in Venetian plaster. The wall with the
tower was built of brick and was surmounted by a small square
tower. The tower was built of brick and was surmounted by a
small square tower.

272. Window of Palazzo.

The window is a large one, with a heavy arch. The arch is
surmounted by a small square tower. The tower is built of brick
and is surmounted by a small square tower. The tower is built of
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refined taste, when they preferred triple windows, whose middle part was round-arched and the side parts were spanned by horizontal architraves (Fig. 269), a motive that may still be found on the Palace of the Emperor in Spalato, and which Sansovino in his Library in Venice indeed clothed with the most refined details, when he supplied a keystone to the arch, and filled the adjacent spandrels with figures after the precedent of the Roman triumphal arches.

279. Window of Palladio.

Simpler and at the same time more effectively has Palladio employed the motive, certainly not on palace or house windows, but on his Basilica at Vicenza, which there in respect to grandeur far surpasses the style of Sansovino.

Palladio has further transformed this motive in a singular way on Villa Pojano, where a massive circular arch is made concentric with the inner and smaller one, and the slabs filling the space between the two arches are again perforated by plain openings.

280. Window of Baccio d'Agnolo.

477 The same idea, but transferred to richer forms, we find employed in the windows of the hall in the upper story of Palace Vecchio in Florence (Fig. 428): except that there instead of the perforated filling slabs, consoles are set like spokes, and further the entire arrangement is enclosed by Composite pilasters with the accompanying entablature, by which an ornamental form is produced, such as is not easily found again in a similar way, and particularly at this large scale.

More modestly is the idea expressed on a window of Palace Pucci in Florence with a beautiful development of the details, having a keystone with arms and a cardinal's hat, crozier and mottos in the arch spandrels. (Fig. 427).

498 281. Other Windows.

A freer treatment occurs on the round-arched window with vertical and horizontal enclosure on Palace Pucetti in Verona, late indeed, but not in an unskillful manner. Below the impostes at each side are arranged hermes supports standing on consoles and pedestals, from which rise the figures, nude from the waist upwards, and that indeed have a returned band above their heads, yet they do not occupy themselves on supporting this, but rather play unseemly tricks (Fig. 431), while the

male figure looks through his spread fingers toward the enticing female figure. On another window, disdainful male figures stand opposite each other, one of which turns his back to the observer. Less skilful are the keystones, formed as colossal heads projecting without any architectural transition, as on the Etruscan Gate at Volterra.

As an interesting peculiarity may yet to be characterized the window in Via Sacra in Florence and that inserted in the formerly open gateway arch of Palace Pitti (Fig. 429).

232. Window of Bramante.

The great Bramante employed the round-arched window in a special manner by placing it within a rectangular enclosure, either in entirely simple form or one most richly treated. The Gothic already sought similar forms in Lombard buildings, and Romanesque art before it; likewise the Early Renaissance had the need for arranging an external enclosure for round-arched windows. (Castle in Ferrara and Hospital Maggiore in Milan). But in the present case we must go farther back. There may have been structural reasons sometimes, which led the masters to seek a form, that afforded a better bonding between the voussoirs and the coursed ashlar, that that by the direct abutting of the horizontal stones on the voussoirs of round, pointed or segmental arches. Such stonecutting is and remains bad, dangerous at all times when employed. It is obviated by the well known ancient Roman jointing of the voussoirs, or even more simply if the adjacent stones between the voussoirs and the coursed ashlar are cut in the same blocks with the former, as Bramante did, and as the Greeks and Romans did before him. We find in Athens the bonded arch in the vicinity of the well known Tower of Winds, a work of the 1st century of the Christian period, where the triangular spandrels already bear complete rosettes, and a further example on Gate de'Borsari in Verona, where the perfected "Bramante window" of the Cancellaria in Rome is entirely prefigured, yet with the difference, that in Verona the detail is coarsely executed. Whether in Bramante's time, allied forms in more beautiful style were preserved from a better epoch of antique art, is hard to state, but is more than probable. (Fig. 433; Gate de'Borsari; Fig. 432; window of the Cancellaria). (Also see further the combination of the window with pilasters

and horizontal lintel in Pesaro, Urbino, Rusciano, etc., in Fig. 24 a).

The introduction of the extravagant window forms of the Barocco style, that take a hundred different shapes, and still are only more or less capricious or dull imitations of the old basal forms, must be omitted here. They would fill volumes without presenting anything new or important. (See Guarini and his followers, among whom he is still most convincing).

283. Window Closures.

570 That Roman antiquity was not satisfied by closing windows and doorways by fabrics, lattices of wood or metal, wooden shutters and the like; it is well known that wooden frames shut into wooden window frames, and that not very small glass disks were common in the imperial period, also that then metal fixtures for opening and closing window, door and shop shutters, such as hinge straps, locks with spring bolts, and that further the wrought joiners' work, mortises and tenons at the joints of wooden parts, grooves, inserted stops (technical methods already employed by the Egyptians), were executed, may be assumed likewise as well known. 169

Note 169. Further see Durm, J., Baukunst der Etrusker und Römer. Part. II. Vol. 2. 2nd Edition. In this Handbuch).

The storms of the migrations of the nations also dispersed these acquisitions of the ancient world, and a later period of rest and quiet development could again "rediscover" what the ancients had previously done, and the beginnings were again as rude and the same as in long past ages. First external and then internal shutters, that swung with hinge straps on pins, or on pivots and rings (sockets), like the ancient Etruscan tombs, fastened by an inside wooden bar, by hooks and rings, or sliding bars and noles, shutters in two folds, held together by hinge-straps or by separate bands and links -- these were practically the means by which men protected themselves from heat and cold, rain and sunshine, for more than five centuries; but for round-headed windows, the outside shutters generally extended only to the imposts; the upper portion between the arch spandrels remaining open.

580 With this primitive and mediæval closing of windows, which always appear as solid wooden shutters with or without small openings for light, and that left the room dark, if men desired

to protect themselves from rain and cold, the early time of the Renaissance in Italy was contented. (Fig. 435).

In adjacent France, accounts for windows in the Castle at Caen (1338), in the Hospital Hotel Dieu in Paris (1376), and in the Palace of Charles VI (1380) make it certain, that also there no other means for closing were in use, and even at the siege of Troyes (1429) such were still mentioned.

Window openings, by which men might admit light and still be protected from wind and weather were hung with oiled linen cloth, or the linen was fixed in the wooden frames or in the openings. Thus in the year 1390 the Carthusians in Dijon closed their chapel windows with oiled linen cloth, and in the "account of the expenses of King John in England" (1359-1360) are mentioned for the windows in the apartment of the king, wood for windows, nails, and oil of turpentine for making the linen cloth transparent. In 1380 Charles VI had money disbursed for waxed linen cloth (*toile cirée*) and nails for windows in the room of Monseigneur d'Anjou. Likewise thin leather (*peau de cuir*) is also charged, made transparent by fat.

In the 14th century the citizens of Paris were acquainted with no means of closing windows other than with oiled linen cloth. According to the accounts of King Rene the same conditions, i.e., the closing of windows by means of oiled linen existed in the Palace at Tarascon (1447), the Palace of Aix (1448), in the House of Pertuis (1450), and in the Palace at Reculie (1471). For the apartment of Louis XI (1478-1481) the accounts of King Renee exhibit payments for oiled paper for closing the windows. This was an improvement in the admission of light; it was less durable, but more transparent. To protect paper and linen against the wind, nap strings and bow strings were drawn through it. This practice still continued in the 16th, 17th and 18th centuries. In the Palace at Fontainebleau even in 1639-1642, paper and glass windows still alternated. The princess de Montpensier stated even in 1649, that she had in the Palace of St. Germain a grand, gilded and painted apartment, but without any glass in the windows! In Bordeaux waxed linen was mentioned even in 1735, and in 1740 oiled paper in the Hospital at Lyons.

284. Glazing of Windows.

Instead of oiled paper, oiled linen cloth and of thinly sha-

shaved skins saturated with fat, glass also occurred for palaces and houses. While still in the entire 15 th century and for 50 years later, glazing was but rarely found, it became tolerably common in the 16 th century (1550), but where it must not be forgotten, that ancient methods still remained in use. Then glass was still quite costly. The requirement for pure and bright daylight in the rooms also caused the omission of stone crosses from the windows, in order to afford freer admission to the light, wherewith the colored glass likewise disappeared, and at the end of the year 1650 the use of only white glass in living rooms was established. Complete glazing was preceded by partial glazing; the small disks (roundels) were in time succeeded by large ones, i.e., the earlier roundels and quarries were supplanted by rectangular panes set in lead, with and without facets (Fig. 434).

In the work mentioned below,¹⁷⁰ is published a colored representation of a sleeping chamber from the 15 th century, whose original is found in Museum Louvre in Paris under the title of "L'Annunciation." It shows a rectangular window without a stone cross, where about 4/5 of the opening of the window is closed by a twofold solid and nailed wooden shutter; one of these is also subdivided in height, while the upper fifth of the window is glazed with lozenge quarries set in lead. (Fig. 435 d). It gives a faithful and indisputable view of a window closure from the time, when entire glazing was not yet introduced. This condition must then be transferred to the arched window, of which we have stated, that the shutters only extended to the imposts, and that the upper part remained open, to later receive glazing.

Note 170. Havard, J. Dictionnaire de l'Ameublement et de la Decoration, from the 13 th century to our days. Work crowned by the Academie des Beaux Arts. Paris. °. D. Vol. 1, Pl. 41.

In the Cathedral at Rheims is to be found a tapestry from the 15 th century, representing the birth of Christ, on which is drawn a glazing with lozenge quarries. From the same time dates in the Library at Siena a picture by Pinturicchio (1454-1513), on which are painted roundels, and in the picture, "A Lesson in Anatomy," after the medical pamphlets of Jean Ketnam (Venice, 1493), are roundels again, and also such are likewise given in the painting by Amorogio Borgogne (died 1524)

in the Certosa near Pavia. Both kinds must therefore have been employed at the same time, when men disused linen, paper and leather. But there must not be confused the small flat pieces of glass cut round and set in lead with the cast roundels with a knob at the centre. (See the glazing with roundels and rectangular glass in the windows of Palace Doge at Venice, on buildings in Vicenza and Florence in Fig. 435).

But the mediaeval nailed shutters for closing windows in general are also found in the Early Renaissance, for which we have tangible evidence, and indeed on one of the most important monuments, Palace Strozzi in Florence. There in the upper story are still preserved two of the old shutters at the rear of the palace next the small Place. But they are not constructed in the rudely grooved way or cut from a piece of plank, but are arranged after the antique fashion in frames and panels, one having five and the other three panels in height, the frame being beset by three rows of iron nails. (Fig. 435 n). On a plate among the publicly exhibited drawings in the Uffizi appears the painted representation of the old window closures of the still existing Palace Antella in Florence, and which in part consist of ninged sashes for opening (Figs. 435 g, i), and partly of wooden shutters, in which are cut small square holes to admit daylight to the interior. (Fig. 435 e).

The colored and white glass disks set in lead were retained in the 15th and 16th centuries, with and without connection with shutters, in the form of roundels and lozenge quarries, as represented on innumerable miniatures and woodcuts, 171; they give place then to larger ones set in wooden sashes, and in the second half of the 17th century, we enter into the modern epoch of the window, which in this time is also freed from the stone enclosure and all superfluous woodwork, and the number of sash bars is diminished. (Figs. 434, A, B).

Note 171. For example in Lacroix, *P. Moeurs, Usages et Costumes au moyen Age et a l'epoque de la Renaissance*. Paris. 1871. The illustrations concerned mostly date from the 15th, but also some from the 16th century.

507 Maria de Medici in Palace Luxemburg made the first experiment with cut glass set in silver bars, but on account of its great cost, this found no great use. 172

Note 172. In the Palace at Mannheim, but set in wooden sashes, such were in existence a few years since, that had dimensions of 8.4×10.9 ins. with entirely flat bevels 0.64 in. wide. By lack of understanding, they disappeared during a restoration. -- In the Palace at Bruchsal, the rectangular pieces without bevels (though indeed no longer the old ones) are 9.2×6.7 ins., and on the main facade are set in wooden sashes, but next the great vestibule stairway are set in gilded leads.

These rectangular white panes, set in wooden or iron sashes or in leads, with varying dimensions retain supremacy until the middle of the 19th century, where also these still larger panes with and at last without sash bars must yield place, and which in the most recent times were again exchanged for the small leaded glass of Louis XVI, after the modern second poem of roundels has died away.

Thus the old again becomes new, and to those among our architects and patrons, who participate in every change today, we wish humor and money!

The dimensions of the glass panes formerly determined their value, and the starting point for the manufacture of large panes lay in the making of mirrors. There was first the endeavor to again produce large sheets, of which Seneca tells in ancient Rome, that they reflected the human figure in its entire size. Italy had taken the lead in this: Venice had the monopoly of the manufacture of large panes of glass, and supplied the entire world with them. But what men understood then as "great", would no longer be prized today. In the inventory of Cardinal Mazarin (1653) is mentioned a Venetian mirror 27×22 ins., and one such 50×65 ins. was still regarded as a wonderful work in 1759. Some years later were already produced mirrors up to 78×47 ins., and the largest framed mirror possessed by Louis XIV measured only 58×34 ins. How precious it was considered may be shown by the occurrence, that the republic of Venice believed itself to have done a great work, when it made a gift of a mirror to Maria de Medici on the occasion of the birth of Louis XIII. What value was placed on the manufacture is established by the invitation of workers from Murano at high wages by Henry II in the 16th century.

But mirrors also played a part in the decoration of the interiors of the apartments of the great and the wealthy. Thus Catherine de Medici (1539) had a cabinet of mirrors, that contained 119 mirrors from Venice. Maria Antoinette had in the Trianon a bathroom with painted mirrors and a boudoir "entirely in glass." The late Renaissance, Barocco and Rococo preferably made use of mirrors in decoration, frequently in a charming, original and most nappy manner. On this side of the Alps should be mentioned the Favorite near Rastatt, the Palace at Würzburg, the Palace in Pommersfelde, etc.

But with the mode of glazing also changed the wooden construction of the windows and their fixtures.

The accounts of Montaigne (1536-1639) speak of divided leaves and distinguish between single and double leaves, (*chassis a fiches* and *chassis orises*), and from 1691-1692 also of sliding windows (*chassis a coulisse*, now termed a guillotine); but they also bring fixed and movable sash in contrast with each other. The sliding windows with sash bars were made of iron as well as of wood. For example, at the City Hall in Rouen, the glass was set in iron sashes. To the sliding windows and the window leaves swing or hinge straps were also added in Italy and removable leaves, like those shown on Palace Antella at Florence. But the movable leaves presuppose window frames, which further were already employed with shutters having a glazed and fixed transom.

With the larger quarry panes then are combined as a closure for necessity internal shutters, that for external walls of ordinary thickness were easily added in the jambs, and received an artistic treatment (Fig. 436),¹⁷³ like the other wooden articles of furniture and construction of an interior, (doors, wainscot and paneling).

Note 173. Blondel, J. F.. *Cours d'Architecture, or Treatise on decoration, distribution and construction of buildings.* 9 volumes, published by Desoint. Paris. 1771-1777.

A technical and perfected execution was received by windows, window shutters and their fixtures only in the late time of the Renaissance, in the times of the Barocco and Rococo, and continuing to our days. Carefully designed in even the smallest parts, taking into account all peculiarities of the material concerned, regarding all possibilities, these innovatio-

innovations in the internal architecture rise to truly model works, and they dominate the internal architecture since more than two and a half centuries. No modern dwelling may dispense with them, they may be in any preferred style; for no intelligent man, for a conventional caprice, would return to the window closures of the mediaeval houses, unless he is willing to say to his friends, as Madame de Maintenon said to Duke de Oailles (1705); "If I longer occupy the chamber of the king, I shall become a paralytic; neither a door nor a window closes. One is so buffeted by the wind, that it reminds me of hurricanes in America." It exhibits a shocking ignorance of the development of affairs, a blindness and a hateful ingratitude to the antique and the Renaissance, when any one prints today:-- "In the arts and in handiwork, almost all problems were solved in the middle ages, and all types were created."

285. Fixtures.

Sashes and sash bars (where the latter were not made of metal) were made entirely of hard wood (larch or oak), the shutters in panel-work after the antique style, the fastenings of windows and shutters were of iron or bronze (brass).

506 The movable leaves in ordinary buildings frequently show fixtures with angle bands (bent bands) and hinge pins (Fig. 437), but in the better buildings are always bands or the antique strap hinges with the use of iron or brass, where only the knuckles are visible, the straps being let into the wood and fastened by pins, whose plain heads often project, sometimes even being gilded. For thin wood, we also see woodscrews used (since 1650) for fastening certain parts of the fixtures. If the leaves are large, then with the bands also occur the inserted corners (the so-called sham-nooks) at the angle connections of the frame. 174

Note 174. Well preserved fixtures of this kind are yet in the Palace at Bruchsal, where all parts are made of plain brass, while the woodwork is painted in oil colors.

The fastening of windows in leaves and their closure was effected for small and simple structures by bars (handle and i-lever) or by sliding bars of the most varied kinds (Espagnol-ette and latch bolts). Handles and knobs frequently received very rich ornamental treatment with the addition of gilding, and also the knuckles of hinge-straps. The fastening of the

shutters were mostly by strap hinges and latch bolts, whose handles on the inner side are mostly treated as hanging movable rings, to afford the greatest possible free space between the jamb and the shutter. These inner shutters were included in the general decoration of the interior, and were accordingly painted, gilded and covered by ornaments.

286. External Windows and Protection of Windows.

To afford greater security against drafts of air and the cooling of the glass surfaces during the cold season of the year, men already in the 18th century ¹⁷³ had recourse to movable external windows, closing inward (winter or double windows), when the permanent windows were made with a rebated ogee joint, the outer ones having a simple ogee joint. (Fig. 436). ¹⁷³

We see on the old palaces of the Gothic and of the Early Renaissance periods wrought iron arrangements placed in the window openings, which are not understood without further explanation, but for which information is given by the very precisely drawn and painted pictures of Pierrenzo di Lorenzo in the Gallery at Perugia. They were intended to receive round wooden bars lengthwise, on which protecting curtains could be fastened to protect against the sun and prevent seeing into the interior in case of need. (Fig. 438). Likewise leaves covered with cloth, as on Palace Antella in Florence (Figs. 435 g, i) are to be seen on the paintings in Perugia. In cities in Piedmont, as for example in Borgofranco, Alba and others, we find everywhere the same arrangements from the late mediæval times (Fig. 438).

287. Arrangements for Security.

Arrangements to prevent burglary are chiefly employed only on the windows of the ground story, and are constructed of iron bars crossing at right or oblique angles, forming squares, rectangles or lozenges, and filling the entire clear opening of the window. These simplest forms are succeeded by ricker, when some of the spaces between the bars are filled by scrolls. (Fig. 439, from a window in Vicenza). In others straight bars are entirely avoided, scrollwork entirely filling the window frame (Fig. 440, from window of a chapel from Pailenza). Swelled grilles, as characteristic for the German Barocco, are found in Verona on houses in Via S. Alesso. (See

Italia Artistica. Verona. p. 154). For round-arched gateways, the opening from imposts to crown is generally filled by wrought iron scrollwork, as shown by Fig. 441 from an arched gateway of Palace Tommasino in Cortona.

238. Main Entrance Gateway.

Entrance gateways. The principal entrance gateways are subject to the same changes from the simplest to the richest, as the windows. The Florentine palaces of the Early Renaissance (Strozzi, Riccardi, Pitti, Gondi) as a rule exhibit as the enclosure of the doorway opening a simply moulded but broad enclosure, that is semicircular at top, with a proportion of the clear opening from 1 to 2 to 1 to $2\frac{1}{2}$, and where all other ornamentation is omitted. On Palace Rucellai the gateways are rectangular at top; on Palace Vitelleschi in Corneto (transition style) the entrance gateway is likewise rectangular, and is crowned by a pediment resting on consoles, whose treatment is given on account of its complex and chaste details (Fig. 14). Then follow the richer portals of the Lombard Early Renaissance, enclosed by pilasters and antique entablatures, of which a splendid example is given by the portal of the old Palace Medici, now to be found in Castle Vecchio at Milan (Fig. 10).

Likewise the abundance of small house portals in Genoa is not to be forgotten, which are sometimes enclosed like the Bramante window, delicately and finely ornamented in details, with figures, sometimes by pilasters or free supports like candelabras and the completing entablatures. In Lucca is to be mentioned the beautiful entrance doorway on Palace Archbishop (Fig. 442) as a charming work of the Early Renaissance.

The most perfect are indeed the splendidly ornamented portals and the entrance doorway to the halls in the Palace at Urbino. Others are found in Cremona, Lodi, Parma, etc. (Fig. 443).

The pilasters again yield place to the half, three-quarter and full columns (Toria-Tursi, Durazzo in Genoa, Sciarra in Rome, etc.), the single columns to double ones with the addition of figures (Palace Spinola in Genoa); angular and segmental pediments with reclining figures (Palace Garbato in Genoa) rise above the horizontal entablatures, and finally the portal columns are merely supports for the balcony added above the

doorway. (Palace Franzoni in Albano).

But instead of columns there also first occur hermes-caryatids, either in attached form at Palace Cippola in Brescia, or in a freer and more animated manner as on Palace Durazze-Brignole (Via Nuovissima) in Genoa, with half figures growing out of consoles, with raised arms in bent pose supporting entablature blocks, on which rest the higher balcony.

Unfortunately female hermes-caryatids are emphasized on the Archbishop's Seminary in Milan more as freely projecting pieces of ornamentation, recalling antique models, in idea like the figures of the Incantada at Salonica (Fig. 445) ¹⁷⁵. Instead of the hermes also appear stocky and muscular entire figures supporting balconies, as they stand on high pedestals at right and left of the gateway at Palace Barzellini in Bologna; as figures not loaded like guards, are they utilized at the portal of Palace Rangoni in Parma.

Note 175. From Canino, F. Le Fabbriche più cospicue di Milano.

572 Grandly treated is the gateway, if a portico be placed before it, which opens in columns with horizontal entablature and an arch in the middle, as at the Mercato in Perugia, where the entrance to the arched portico is further particularly emphasized by projecting columns. (Figs. 446, 447).

The motive has a grand effect, transformed on a great scale, as at the passage through the portico of the Uffizi in Florence with the triple window over the arch and the standing figure arranged there, as well as the two reclining forms (Figs. 448, 449). Vignola returns to the simple form on his portal in Caprarola.

As erratic must be designated the decorative treatment of a portal, as represented on the so-called Gate Bombardiere in Verona, where the flanking columns are shaped like vertical columns standing on calfskin heads of drums and covered at top by a plate, on which rests a mortar as a support for the balcony. Arms, trophies, helmets, powder horns and trumpets decorate the shafts of the accompanying pilasters and the jambs of the gateway, while the parapet of the balcony consists of small gun-barrels alternating with pedestals of trophies.

573 As a jest is to be regarded the gateway of House Zecchino in Rome, that is represented as the "widely opened mouth of a

For the purpose of this investigation, the following facts were ascertained, or are being ascertained, by the following means:--

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grotesque devil, and a long nose hangs down over the round arch as a keystone."

289. Gateway Closures.

Portals constructed of bricks either exhibit simple members like the windows, or also have pilasters and mouldings of *terra cotta* made in larger pieces, to which reference has already been made. (Bologna).

The gateways next the street in harmony with the other architectural precautions taken for the safety of the occupants of the house or palace, also had such as these;-- solid ground story walls with few openings, windows commencing high above the sidewalks (so far as this does not concern houses with shops), the arrangement of the master's residence in the upper story, gratings over the ground story windows, the closing of the windows by strong oaken shutters beset by iron nails, etc., and these experienced no further artistic development, particularly in the first time of the Renaissance, where in the insecure political conditions in the cities, the same means for protection were used, as were introduced in the middle ages.

We find at first strong framed wooden leaves, which were entirely covered by iron plates, fastened to the wooden parts by nails and rosettes, with which by alternation and arrangement a sort of decoration was attempted. The door leaves hung on heavy straps and pins; fastening was effected by plain iron bolts (Fig. 437.e; from a palace doorway in Genoa). Any one desiring admission must call the attention of the doorkeeper by rapping with the metal knocker (iron or bronze).¹⁷⁶

Note 176. Gate leaves covered with iron plates are still found on Palace del Municipio, on Palace Franzoni in Albaro, and on Palace Gambaro, where also a small entrance door is arranged in the great leaf of the door.

After the form of the old window shutters on Palace Strozzi indeed were also constructed those of the court doors, that must also show the woodwork externally, where men again had recourse to the antique framed work, in which the panels were not large, but the framing was strongly joined and beset by rows of nails (with round and pointed heads), for which can also be found a model on the framework of the bronze doors of the Pantheon. As an example of such simple doors serves Fig.

437 a, which was constructed in the Monastery of S. Lorenzo in Florence.

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575 A perfected development, that at the same time became typical, where the plain panels were decorated by richly carved rosettes, occurred later. The nailing of the framework is there retained (see Palace Guadagni at Florence), and the door leaves snut into a frame beset by three rows of nails (Fig. 450). With these are to be considered the beautiful entrance doors in the ground story of the Uffizi, with the pear-shaped nails and the grated transoms.

Instead of the rosettes are inserted painted panels on the court doors of the Palace in pienza, that bear at the top a flower with a small half moon (indication of arms), but where the nailing of the framework still remains.

But also this kind was again transformed; in its place appears the carved framework, whereby originates the most beautiful treatment of Renaissance doors, and we reproduce in Fig. 442 those on Palace Archbishop in Lucca as a prominent example. To these severe forms stand opposed in the late time the bizarre forms of the Barocco, whose beginning is already shown in the portico doors of the Uffizi, which bear the arms of the Medici.

576 The Italians employed in France, who introduced the new architectural style there, also remained true to the ground principle afar from home, to not lavish too much ornament on the street doors. Under Francis I they adhered to the nailed framework intersecting at right angles and with painted panels (House in Orleans) and likewise under Henry III (House in Toulouse), even if between these under Henry II leaves flanked by little columns also occur (House in Narbonne). Freer becomes the structural and decorative treatment, first with Louis XIII, that increased until Louis XV, to again return to the supposed classical under Louis XIV. Door panels with pediments, longitudinal panels rounded at top and bottom, perforated panels closed by carved wooden rounds or iron gratings, an alternation of round, oval, long and cross panels, adorned by medallions, delicately carved little figures and heads, festoons of fruits, recurved panels with cartouches, masks and the like, appear instead of the severe architectural forms, lighter construction in place of doors for offense and

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defense, only desired as elegant closures, that have to prepare those entering for the likewise ornaments, interior. 177 (See also the window gratings of wrought iron in the ground stories of many palaces in all cities of Italy.).

Note 177. See beautiful examples in Doly, S. *Motifs Historiques d'Architecture et de Sculpture d'Ornement*. Paris. 1869. Vols. 1 and 2.

290. Frames and Fixtures.

In the richer examples, the door leaves mostly shut into separate wooden frames, that frequently project 2 ins. and even more into the clear doorway as wide frames; but many shut in the still antique manner directly into the stone jambs. There they hang on pins with flat straps; but nowhere are left visible the fixtures for fastening or those required for movement; in no case do they appear in an ornamented art form, and do not disturb or cross the surfaces and mouldings of the joiners' work in even the simplest way.

The woodwork is left in the natural color of the wood in the early time, merely being oiled and varnished or coated with oil colors in the time of the decadence. Relief and pattern ornamentation on the metal coverings are shown, for example in Genoa.

291. Door Knockers.

In all phases of the style the door knockers preferably continue an object of artistic treatment, whether made of unpretentious iron or more valuable bronze. Female and male figures of the gods, animal forms (Neptune with sea-horses or dolphins), fanciful beings, masks and plant ornaments were combined in charming and very striking works of minor art. Venice, Verona and other cities preserve a great treasure of such peculiar inventions of Renaissance art. We give two simple examples from Rome, one from a private house, the other from Hospital S. Spirito (Figs. 451, 452).

292. Niches.

Besides the windows and by wider spacing of the axes, either rectangular recesses, segmental or semicircular niches animate the wall surfaces between the window openings, mostly intended for the reception of figures, but which even now have not always reached their places.

Palace Bartolini (later Loconda del Nord) in Florence exhi-

exhibits this motive on the four piers of its facade with three windows, that the Renaissance borrowed from the late Roman art, ¹⁷⁸ executed in a systematic and effective manner. As a characteristic motive of decoration is there employed, exactly as in the antique time, the snell, whose ninge is either placed at the centre of the semicircle or the crown of the arch, from which point its ribs extend outward (Figs. 453, 454). Translated into the grand and monumental, we find the snell (conca) on Villa Falconieri near Frascati (Fig. 314), on Villa Sacchetti and on the garden facade of Palace Vatican. But likewise with wide intermediate piers and broad angle piers, we again find the charming architectural motive; thus for example on Villa S. Columba in Siena, on the piers of the Uffizi and on the angle piers of the Mercato Nuovo in Florence, there with a separately wrought support for figures. The imposts of the niches, with the use of snell decoration, are accentuated by a plain band or by richer mouldings.

Note 178. See Part II, Vol. 2. Baukunst der Etrusker und Römer. 2nd edition. p. 417, 418. Of this Handbuch.

As suggestions were also tried the rectangular flat recess in the window piers of Palace Pandolfini, while they are sunk deeply on Palace Bartolini, and perhaps were intended to receive ornamental work. On Palace Pandolfini they have rather the character of paneling.

The further animation of the wall surfaces by pilasters, columns and caryatids was already considered with palaces, the construction of facade surfaces with dressed stone, split stone, bricks, and their covering by means of majolica, plaster and its decoration by sgraffito, shaded and fresco painting, animation by stucco ornamentation, mosaics, and facing with variegated or precious kinds of marble were mentioned, so that we merely name these here on account of the connection.

293. Balconies.

The balconies, that lent a stronger relief to Renaissance facades, either extended along the entire facade of a building, were limited to certain parts, or also to only single windows thereof. Palace Pitti has continuous balconies in both upper stories, Palace Uguccioni has one such in the second story.

579 These balconies are structurally formed by projection of

pieces of cornice above the lower walls and by recessions of the wall of the upper story, whereby is produced a not too strongly expressed separation of the different stories from each other. Men thus also obtained a certain degree of safety for the use of the balcony, when a part of the balcony slab had a bearing on the solid wall of the lower story (Fig. 456). Still more safe was the procedure indeed with out slightly projecting balconies on Palace Pandolfini, that entirely rest on the masonry. (Fig. 456). Such arrangements could only be executed with thick walls; with those of less thickness, one must resort to the supported balcony, as it is common in the entire South and has also become naturalized among us in the North. It generally consists of stone slabs projecting 3.0 to 3.3 ft., the supporting consoles and the balustrade. The slabs mostly accord with the story belts in depth and section, are plain on the underside or have shallow coffers (Fig. 455, Palace Labbia in Venice), and according to the projection of the balcony, are supported by at least two or a greater number of consoles, often combined in pairs.

294. Balcony Supports.

The balcony supports in their artistic forms are either to be referred to an earlier wooden construction, or to stepped projecting beams ending in volute form. The consoles or the projecting pieces of the beams are frequently supported by columns or caryatids, particularly if the balconies are arranged over the entrance doorways.

295. Balustrades and Railings.

Following mediaeval tradition, in the Early Renaissance the balustrades were executed in stone and in the form of small columns, which were placed in a definite arrangement with angle and intermediate pedestals, and were finished by a heavy moulded cap; thus they almost always stand directly on the balcony slab without the interposition of a separate plinth. Their height is usually 3.3 ft. and also somewhat more. The little columns sometimes belong to the Doric, or sometimes to the Ionic or Corinthian order, when the shafts are smooth or fluted.

296. Balusters.

These small columns in the time of Giuliano da Sangallo give place to the so-called balusters, free supports like candi-

candelabras. They sometimes exhibit a form opposing the load, sometimes depressed by it, or both forms proceed from a neutral middle, one directed upward and the other downward. Like the little columns, they likewise belong to the different orders. D'Aviler distinguishes between Tuscan, Doric, Ionic, Corinthian and Composite balustrades; his countrymen divide them into "piedouche", fluted, paired, banded, paneled, rustic, urn-shaped, returned, vase-shaped." Besides those with circular sections also occur those with square or rectangular returns; compressed and elongated forms were often employed beside each other on Venetian buildings, even those less happily ornamented by grotesques (for example on Palace Pesaro in Venice), and besides the simple and plain treatment of the surface, there occurs, according to the nature of the material, the richest ornamentation on certain parts of the baluster. In Fig. 174 are given some baluster forms of the late epoch. Instead of the architectural supports also occur free forms for the same purpose.

Perforated balustrades between the stone pedestals as a balustrade panel are exhibited by the balcony on Palace Contarini in Venice, and a balustrade with ornamented slabs, on which are sculptured in strong relief arms, chimeras, Medusa heads, etc. are shown by the balcony of Palace Gippola in Brescia (Fig. 457). The small balcony on the Cancelleria in Rome likewise has a solid balustrade of stone slabs with arms and ornaments in skilful work.

297. Iron Railings.

A balcony railing entirely of iron and of beautiful workmanship is preserved on Palace Bevilacqua in Bologna (Fig. 281). A balcony arranged at the angle of the building with an outlook on two streets, by the use of a diagonal support and a small exit doorway, is to be found on Palace dei Diamanti in Ferrara. The pedestals of the balustrade frequently receive special caps with spheres, or with crouching little lions as in Venice, a motive borrowed from the middle ages. As a railing of wrought iron may be mentioned a "stair railing in wrought iron" in a house on Via Mazzoni in Arezzo, but which is not of Italian design.

298. Bay Windows, their Exterior, and Examples.

Bay windows on private houses are authenticated in Grecian

and Roman antiquity; Arab architecture made the most extensive use of these projecting structures, which animated the facade even more extensively than the balcony. Whether and how far the early Renaissance employed these projections is now hard to state; that men took care to remove them, wherever existing, has already been stated, and the reasons given for this. The architecture of the grand style indeed could not begin too commonly with this addition, which was such a favorite in the late German middle ages and in the German Renaissance. It has again come into honor at present in more frequent use in all historical and even non-historical styles, though not always improved in form.

On smaller buildings and with stories not too high, the bay window on the exterior ever remains an effective piece of decoration, and is justified more in a northern than in a southern climate.

As a bay window in the good time of the Renaissance may be taken a moderately large projecting structure, open at the sides, but covered above, but not freely developed from the facade, rather in a protected location, placed at the projecting corner of two buildings. It rises from projecting stone beams with balustrades on two sides, a stone column at the angle, that receives the wooden architrave with coffered ceiling extending from the external walls. A small doorway in the wall permits access from the house to the bay window; above the doorway itself proudly appear the arms of the Medici, carved in stone. It is a well known small architectural fragment, which is to be found in most sketch books of architects visiting Italy, and was published in modern times by Gnauth in the work mentioned here. ¹⁷⁹ (Reschaeorff).

At the carnival time were, and still are transformed the balconies of the palaces of the Corso in Rome into bay windows, when above the stone balustrades of the balconies are constructed pretty glazed and roofed wooden structures, that afford for the occupants and their guests a protected place during the carnival festivals on the street.

Similar to these are also the two still preserved roofed balconies on the Castle and on Palace Roverella in Ferrara. At the latter the bay window is indeed a work not originally planned on the dignified brick facade subdivided by pilasters.

For the entire width of the wall surface between two pilasters, it projects in the form of a half octagon over the main entrance portal, carelessly intersecting the beautiful terra cotta frieze and the architrave between the second and third stories. It is constructed of woodwork painted a brownish-yellow; the angle supports are formed of small piers like Doric, the intervals are filled by great glass windows, the bottom is contracted in ogee form without any ornamentation of the surfaces, and is painted the same color as the woodwork; the hip roof is not very steep and is plainly covered with metal, and is painted a slate-gray; on its apex stands a bronzed eagle with extended wings. The exterior appears to have originated on the ground of impressions received on this side of the Alps; it might just as well stand in the Tyrol or in Nuremberg (Fig. 453). On the bay window on the Castle at Ferrara, see Section XX and the Note. 180

Note 180. See Müntz, E. *Histoire de l'Art pendant la Renaissance. II. Italie. "The Golden Age."* Paris. 1891. p. 423 (with the incorrect name of the place as Florence instead of Ferrara).

Not on the house, but rather on princely palaces have been preserved other examples, and indeed in Palace Ducal at Urbino. Between the round towers of a narrow facade, an open bay window extends through four stories, which shows in the basement a closed substructure, but in the stories above is an open projecting structure, covered by semicircular tunnel vaults, whose ends are adorned by Corinthian columns with intermediate perforated balustrades. The uppermost ends above the antique main cornice with a volute-shaped termination with an eagle (Fig. 245).

A bay window resting on consoles, with richly decorated parapet, ornamentally treated main cornice and only intended for one story, is constructed on one of the court facades with such noble details and such happy proportions, that may be designated as a model and characteristic of the style.

299. Loggias.

Serving for the same purpose, the loggia must be termed another architectural motive of facades. It affords greater space for an assemblage of persons, an absolutely secure standing place and protection from rain and sun. In Venice, air-

already in the middle ages, it was a favorite architectural arrangement, and it forms a characteristic motive in Venetian palace and house architecture of those times, and during the entire duration of the Renaissance to this hour. From Venice it must have made its way to the rest of Italy, and it enjoyed permanent favor, particularly in villa buildings in Tuscany and also in southern Italy. But likewise on the greatest palaces, for example, Palace Farnese in Rome, it again appears. In a modest yet expressive way is one executed on the Vineyard di Papa Giulio outside the city walls of Rome (Fig. 460).

524 The loggias of Tuscan palaces opened like a story beneath the roof must not be confused therewith, since these already, on account of their elevated position, had nothing to do with the purpose of a balcony or an outlook, in order to be able to enjoy the life of the streets.

The loggia here intended is to be regarded as a front and connecting room between the best living rooms located next the street.

300. Balustrades and Attics.

With the main cornice does not terminate the facade in all cases at top for both public and private buildings; men frequently sought to introduce a stronger accenting of the upper ending, a finer termination of the masses. Fra Giocondo (?), on his *Palazzo della Ragione* in Verona, attempted by placing free statues at regular distances, what had been already tried on the main cornice of the Cathedral in Siena. The arrangement looks rather dry. By placing a balustrade, consisting of plinth, pedestals with intermediate little columns or balusters and a continuous cap above the main cornice, the upper termination becomes more effective and imposing, which can be still increased by placing free figures on the pedestals. Compare in this sense the terminations of the facades above the main cornices of *Palazzo Comunale* in Brescia, on the *Basilica of Palladio* in Vicenza, on the *Library of S. Marco* in Venice, as well as Figs. 257, 258, 269.

But the closed structure above the main cornice in the style of the Roman triumphal arch must always remain the most expressive ending of a monumental building. It is even elevated by the addition of statues, by the arrangement of reliefs and

of tablets for inscriptions. Its effect is again lessened by the insertion of window openings in its front. These become parts of a low occupied story, as frequently the case on the palaces of Palladio, on which the balustrade must give place to the window front (Palace de Porti, Palace Valmarana, both in Vicenza), or the addition becomes a structural attic story, as on Palace del monte in Bologna -- which is indeed too much of a good thing. To an addition of a different kind by battlements above the main cornice reference was made previously at Palace di Venezia in Rome, which was also executed on Palace Malagutti in Bologna, in both cases for practical reasons, with the purpose of a possibly better defense of the house. At Fountain Trevi in Rome above the attic without windows is further placed a balustrade, an overloading of terminal motive on account of intended better appearance. (Figs. 257, 258, 274, etc.).

301. Pediments and Belvederes.

The antique pediment scarcely appeared on the house in the good time of the Renaissance; the later masters first employing it, but then only with a cautious ootrusiveness. Almost none of the villas of Palladio, and not even his palaces, are without it, not merely over the porticos, but over certain parts of the building, rising as supported by columns, or also above the plain surface of the wall. The Palace del Tribunale in Bologna, the Palace in Caserta, some buildings in Milan, the Villa in Poggio a Cajano above the columnar portico, Palace Contarini in Venice, above the loggia, etc., it appears, though mostly in a modest way.

The tympanum is then commonly ornamented by a great shield of arms with foliage and fluttering bands, while the three angles of the pediment (two ends and the apex) are accented by free figures, and this particularly by Palladio.

In general, church architecture retains the pediment as a most expensive motive.

In the outline of the dwelling frequently appears the loggetta and belvedere, structures like loggias extending above the roof. On a closed substructure stand square masonry piers, connected by slender arches on architraves and supporting a low hip roof, forming a room open on all sides, that serves as an outlook, as well as frequently for a drying room or for

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managing the housekeeping. For the villas the belvedere seems to be regarded as ^{an} indispensable addition. It exhibits an artistic form at Villa Lante in Bagnaja, at Villa Medici in Rome, etc., a plain form on rural villas (Bellinzona and other places).

But belvederes may also form the termination of the enclosing wall of a garden, as a charming but no longer existing example on the street before Gate Pia at Rome still exhibited in the year 1867 (Fig. 461).

302. Chimneys.

Another but artistically doubtful accessory above the roof was formed by the chimneys. They are and remain a necessary evil for the flat roofs and at best retain their purely useful form, with which men are satisfied in most cases. An artistically imposing development, such as occurred in the French Renaissance, retaining the high mediaeval roofs, was refused to the Italians, and what they undertook in this direction was of little value. Vignola constructed a chimney with cap in the Villa di Papa Giulio near Rome, that Letarouilly first published; Serlio ¹⁸² gave others of square, octagonal and circular external forms, where the smoke sometimes escapes from the apex, sometimes through slits in the sides; he says of them particularly, "according to the custom of Italy." Of another somewhat oddly constructed, he says on the contrary, that it is "after the French fashion;" before I saw any like it." We give in Figs. 462, 463, some of the former. Rubens gives in his work on the palaces of Genoa (Palace Spinola (Prefettura)) representations of chimneys above the roof, whose beauty must also be termed doubtful. An entire small book on Venetian chimneys was written by G. M. Urbani de Gnehtnof, ¹⁸³ with the addition of 320 drawings by Luigi Panzi. According to form, they were distinguished as bell, crushed bell, trident-forked, classical and monstrosity! certainly a pretty list of flowers, a selection from which is found in Fig. 463.

Note 181. See text, p. 454.

Note 182. Book VII of his work on Architecture. p. 75.

Note 183. 1892.

303. Dormer Windows.

Dormer windows are variously treated in Serlio's Book VII,

but always only in connection with steep roofs; hence these always exhibit the French character (Fig. 159).

Dormers have a square or rectangular window opening; the enclosure is plainly moulded and bears a roof with pointed gable or one in segmental form. Likewise circular window openings within rectangular enclosures with segmental caps were also constructed. ¹⁸⁴ (See Section IX. Roof Construction. Figs. 159, 160).

Note 184. See Servio. Book VII. p. 163.

304. Covering and Form of Roof.

The Vaulted roof covered with mortar of the small houses in the South (vicinity of Naples, Capri, etc.), the flat antique red tile roof with flat and hollow tiles, the covering of plane roof surfaces with sheets of lead (Venice) and sheet copper; the covering of vaulted roof surfaces with the same materials, thus with tiles and metal (Cathedral in Florence, Omilia in Pistoja with tiles, S. Peter in Rome, Basilica in Verona with metal), the defective mode of removal of water, the lack of collecting gutters on stone and wooden cornices, and of conducting pipes, the covering of strongly projecting belts by tiles (Uffizi in Florence) bedded in mortar -- have already been treated, and may be but briefly repeated here on account of the general description.

305. Heraldic Ornament.

Ornamental additions of importance are the massive stone shields of arms of prominent and princely families on houses and public buildings. Every one took care that his name should be transmitted to posterity in a monumental way with the buildings erected by him. In affixing the family arms the Renaissance followed a mediaeval custom, which in that time was expressed in a more restricted manner, but was more freely conceived and employed in the new art, and was especially embodied at larger scale. The flat or slightly curved long triangular shield with point downward disappeared, and gave place to more flexible forms; tilting helmets with spreading ornaments (beautiful examples of such are on the vaults of the Bargello and of the Loggia dei Lanzi in Florence) vanish, and in their place appear cardinal's hats with conventionalized and symmetrically arranged tassels, the papal tiara with the great keys of S. Peter, or open ducal coronets and the

doge's cap of the republic of Venice. The oval form, which is surrounded by rich cartouche work, is preferred for the shield.

579 Apparently suspended from great stone consoles (in volute form) with flying bands, the shields of arms ornament the angles or wall surfaces of buildings. (See Fig. 464, the massive papal shield of arms on the angle of Palace Arcoisnop in Florence). A richer example remains to us still on the angle of Palace Comunale at Prato, adorned by the balls of the Medici, where two small female figures standing on consoles support the arcs (Fig. 465).

306. Metal Decoration.

As ornaments in metal, and indeed mostly of plain iron, but elevated to art works by the hands of artists, we have to mention on the residences, especially in Tuscany, the torch and banner holders, the ring fastenings, the holders for receiving protections of windows and the lanterns.

Those already on Gothic buildings and on those of the transition style formed a part of the minor decorations of the facade, as shown by Fig. 466 ¹⁸⁵ from Palace Vitelleschi in Corneto. What the improving period of the Renaissance made of this primitive Gothic form, or how it transformed this into an art work, is shown by the lanterns on Palace Guadagni and Palace Strozzi. A representation of such is given in Fig. 467, and in Fig. 468 one of a banner holder with a fastening ring, which may be designated as a masterpiece of the smith's art, beside which can only be placed the similar pieces in Siena. Somewhat ruder but still interesting are the holders on Palace del Podesta in Bologna.

Note 185. Reproduced from Boffi, L. *Il palazzo Vitelleschi in Corneto-Torquinia*. Milan. 1886.

SECTION XVII. COURTS IN HOUSES AND PALACE ARCHITECTURE. FORM AND ARRANGEMENT.

Courts with Piers and with Columns. Admission of Light and Air. Elevation and Subdivision of Facades. Free Supports, Arches and Architraves. Decoration by Painting, Stucco and Sgraffito. Palladio's Courts with colossal Order, Galleries and Terraces.

307. Courts with and without Porticos.

Living and business rooms and state apartments in the house are grouped around an open court after antique custom, and are connected together by doorways and passages, and by stairways with the different stories. In smaller dwellings the walls of the stories enclose the court; for larger houses and palaces covered porticos are placed before these, so that the different rooms are also made accessible from them. Thus these surround the court, either on but one, on two, three or four sides. As examples thereof may be taken:-- as a building without a portico court, the little House occupied by Michelangelo in Rome; with portico on one side, the casino of Villa Gessi; with porticos on two sides, Palace de Romanis and Palace Patrizi; with three porticos, Palace Lante, Palace di Firenze and Palace Vicolo del'Oro; with four porticos, Palace Farnese, Palace Sciarra, Palace Negroni, Palace Borghese, Palace della Cancelleria, Palace Sora, etc., all in Rome, as well as a great part of Florentine, Genoese and Milanese palaces. Men sought apparently to enlarge small courts by additions or by perspective deceptions, (Palace Spada in Rome), or by the arrangement of niches with fountains and flower beds. Great courts were also crossed by porticos to make them appear considerably larger. (See Palace Montecatini, Palace Bossi, Palace Angelo Massimi and Palace Pamfili in Rome, the wonderfully beautiful and moderately large court in the Certosa near Pisa, with the draw well in the transverse portico, and that of Palace dell' Collegio S. Eustachio at Milan).

530 308. Forecourt of Honor.

As already stated, the Renaissance did not stop with these simple rectangular or square court plans: it also introduced (see Serlio, Book VII) the elliptical plan, the circular and polygonal forms into the sphere of its architectural activity. Likewise the forecourt of honor with or without a semicircular

termination, Serlio did not disdain to propose. R. Redtenbacher (Art. 200) desires to allow the court and stairway arrangement to play a principal part in Italian palace and house architecture, and promises to treat them on a grand scale, but in the course of his treatment of stairway arrangement, he forgot the courts. The truth of his assertion, that they play a principal part, cannot then be contested.

Like the form of the ground plan, the design of the court facade occurs in different ways. Either the porticos are only arranged in the ground story, then above them rising the stories with windows in harmony with those of the fronts, or even in a diminished number, to supply an increased and better access of light and air to the interior of the court, as this was done in the Palaces of Urbino and of Caprarola (Fig. 484), at the Sapienza in Rome by Giacomo della Porta, and then at Palace Strozzi in Florence and others. Above this the uppermost story is also further treated as an open story (colonnade with horizontal entablature), as on the street facade of Palace Guadagni and on Palace Vatican in the court S. Damiano by Raphael.

Instead of the internal court also occur those open at one side, thus forming smaller or larger courts of honor, where the enclosure next the street is effected by a blind wall with the entrance gateway and one story in height (Peruzzi at Palace Ginotte in Rome, and in the form of an atrium at Villa Sauli in Genoa; see Section XIV, Villas, and Fig. 335), or they open toward a rich garden theatre, as at Palace Pitti and Genoese palace courts.

309. Architectural Development of Courts.

The architectural development of courts was not sparing; porticos, windows, wall surfaces and cornices have the same treatment as the street facades, if not even a higher artistic effect, at most that in general and details they were more finely harmonized, and frequently had no similarity to the effect of the facade on the street. Compare in this respect the Florentine rusticated palaces, i.e., their street facades with the facades of their internal courts.

On the brick palaces of upper Italy is retained the same ground idea, only there the contrast is not so abrupt, being softened by the nature of the building materials. Next the

streets and in the internal courts are the same love of ornamentation and the same refinement of the details. The courts are entirely arranged as paved courts after the antique manner, i.e., the rainwater (on half) is led toward the interior. Pier courts and columnar courts are distinct; both kinds occur at the same time. For the former the Gothic, for the latter the Romanesque and the antique architecture supplied the inspiration and the model. Piers of octagonal cross section occur in the great court of Palace Doge in Venice, and in very pure form in the court of the little Palace di Venezia at Rome, the massive structures, indeed commenced in Gothic. Likewise Bolognese palaces adopted it. (See pier capitals in the court of Hotel Brün at Bologna, cross sections of piers in the ground story of Palace Doge, and pier capitals in the little Palace Venezia. Figs. 200, a, b).

But at approximately the same time was employed by Bramante the antique Roman rectangular pier with projecting half column (great court in Palace di Venezia at Rome) and pilasters, and recourse was had also to the antique colonnade. (Palace courts in Urbino and Gubbio by Laurana in 1468, Fig. 478).

The late Renaissance time and the Barocco style employed in the court of Palace di Venezia the first mentioned antique Roman rectangular pier with half columns and pilasters, frequently extending through all the stories, without entirely rejecting their love for columns. Then coupled columns were preferably taken, as proved by the courts of the Brera, of Palace Marino in Milan (by Alessi in 1555) and of the Seminary Arcivescovile, of College Elvetica there with its double courts, then particularly the courts of Genoa from the Jesuit period, (University, Palace Ducale, Palace Durazzo, Brignola, Tursi-Doria, Grimaldi, Lomellino, Lecaro and Spinola), and finally the magnificent court of the Borghese in Rome. (Figs. 471, 482).

310. Venetian Courts.

Venetian palaces, in the treatment of their courts, do not bear the average character of Lombard, Florentine, Bolognese or Roman courts. They are not attached to a harmonious great plan on account indeed of the peculiarity of their local conditions, but yet in their Palace Doge, they possess one of the grandest and most magnificent designs of courts in the

world. Contrasted with this in the same place is the indeed most simply constructed with piers of square cross section, the court of Fondaco de' Tedeschi near the Rialto Bridge, a plain pier court about 88.6 ft. square.

Piers with pilasters in three stories and with galleries extending around are shown by Palace Cornaro, and by Palace Grimani in smaller proportions, a beautiful arrangement of two courts of unequal sizes. Rectangular piers with arches are also shown by the Milanese Palace Arcivescovile, and the same motive with a construction of piers, arches and pilasters with rusticated ashlar in the court of Palace Thiene in Vicenza. Here is also a periodic return to simplicity!

534 The pure and simple columnar court of the Florentines is retained by Laurana and also the great Bramante in his Cancellaria court, even if he once departed from it at S. Maria della Pace. The masters of the late Renaissance and of the Barocco did not first again adopt the Roman rectangular piers, strengthened by pilasters and half columns, but it was rather the great architect of Urbino at about the change from the 14th to 15th century. The court of S. Maria della Pace and before it the court of Palace di Venezia -- and not of Palace Farnese -- are milestones for the renewed adoption of the pier and its treatment in the Italian Renaissance after the model of the antique Roman theatre and amphitheatre.

The free supports of porticos are connected after the antique manner by a horizontal entablature (architrave, frieze and cornice, or by arches resting directly on the columns or on an interposed block of the entablature. The straight entablature is declared to be most dignified by L. B. Alberti. (Fig. 472). More frequently straight pieces of entablature alternate with the arches, and this is required by coupled columns, and is effected in the most charming way in the small court of the Brotherhood dello Scalzo in Florence (Fig. 473).

535 The porticos extending around the court space are not of equal width on all sides (Palace Giugni, Palace Strozzi, Florence). Within these are frequently arranged the stairway to the stories (Palace Archbishop, Fig. 474, and Palace Gondi in Florence). For small dimensions of the court, the stairways frequently reduce its entire area, surrounding this on three sides.

311. Free Supports.

With the earliest kind of free supports in the architecture of the court, is the octagonal pier taken over from Gothic, as shown by the little Palace Venezia at Rome, and as exhibited by the court of Hospital S. Giovanni dei Genovesi there and some of the Bolognese courts. The solutions of the forms of capitals there are interesting, particularly when this concerns the Corinthian order. Sometimes the cell is made octagonal like the shaft; at other times it passes into the complete circular form at top, and accordingly the acanthus leaves are sometimes placed on the angles of the bell, or sometimes cover its flat surfaces. (See the forms in the court of Hotel Brün in Bologna and Palace Fava there, where it is also shown how the forms of capitals are completed, when two half columns are attached to the sides of the square nucleus pier).

312. Angle Supports.

For the courts with square piers or columns, the form of the angle supports is always an object of thorough study or reflection, since each master of importance attempted something different. Those of the early Renaissance, which employed octagonal piers or columns, like the ancients also placed at the angles the same piers, that they employed at the sides. Since they chiefly used the Doric or Corinthian order, and both forms of capitals could be employed anywhere without transformation, then the question solved itself; and when the Ionic came into use, men were naive enough to place the bolsters all toward the same side, as is the case in the loggia of Villa Careggi and in the oblong court of the Certosa near Florence. Bramante desired in his high court facades in the cancellaria at Rome to have the angles appear stronger, at least to the eye, and he replaced the angle columns by angle piers. The architect of the court of S. Pietro in Vincoli at Rome hit upon the odd solution of the angle, when he placed two half columns at a right angle to each other, and thus obtained a heart-shaped cross section of the angle support. In the court of Palace Borgnese at Rome the master arranged a square pier at the angle with two complete columns at two sides. Less simple became the case with the use of square piers with projecting half columns, as at Palace Farnese in Rome, where Sangallo employed a projecting angle pier and attached

half columns. Likewise in the court of the Collegio Romano was attempted a peculiar solution, and Cigoli in the court of Palace Non Finito at Florence also chose the heart form, but made it somewhat stronger by the projection of pilasters. It is then interesting, now he managed with the diminution of the columns, and returned the members of the capital around it. Palladio strengthened the support of the angle in one case by setting three columns at the angle; at another time by employing piers with half columns, he set a projecting pier at the angle, giving it the same projection as the attached half column.

Scamozzi likewise employed piers at the angles, but placed columns beside them only at the smaller sides of the court, and compensated for unequal intersections of the columns in the court by selecting the architrave for their covering. In all circumstances, this permitted a greater freedom in movement than the use of arches.

313. Archivolts and Spandrels of Arches.

But the kind of angle support again had as a result peculiarities in the archivolts, since only for a square section of the angle pier, such as Bramante employed in the court of the Cancelleria at Rome, was possible a classical solution of the imposts of the archivolts without mutilation. All Tuscan columnar courts (Fig. 476, courts of Palace Strozzi, Riccardi and Piccolomini), where angle columns were used, exhibit such at the intersections of the archivolt sections. At the junction of the arch mouldings on the intermediate columns, men adhered rather to solutions, such as occur on Palace Diocletian at Spalato and on late Roman buildings in Syria, than to forms from the best period. On Palace Rector in Ragusa was employed a half mediæval way, the moulding dying against an inclined surface, which does not look like master Michelozzo, but is still suitable for use as coming from him. Also for the moulding of the archivolt recourse was occasionally had to those of the late Roman style,¹⁸⁶ when this was treated as garlands of fruits and flowers or surface ornaments in the form of interlaced scrolls. (Arch in Maddalena de' Pazzi, etc. at Florence).

Note 186. See Part II, Vol. 2. 2nd edition. (Fig. 454, p. 410) of this Handbuch.

The arch spandrels between the archivolts and cornice were then either simply enclosed (see Palace Archbisnop in Florence), or they were beset by medallions bearing rosettes, as in the second court of S. Croce in Florence, while the small angles thus produced were filled by cupids and ornaments. Instead of rosettes also occur medallions with figures, as for example in the court of Hospital Maggiore at Milan (Figs. 477, and 5 of the street facade of this building).¹⁸⁷

Note 187. From Canino, F. Le Fabbriche più cospicue di Milano.

314. Architrave.

Where architraves appear instead of arches, these must be especially constructed for larger spans, and like the ancients, the Renaissance had recourse here to the straight arch. We find this mode of construction boldly treated in the court of Palace Marfisi at Verona, where the antique architrave members with triglyphs are interrupted in an original way by a rusticated straight arch (Fig. 148).

315. Brick Arches.

Entirely differently treated in form are the arcades, when bricks are the building material for the arches. On the surfaces was then developed the entire luxuriant world of form in flat figure and plant forms, such as is peculiar to the brick architecture of upper Italy southward to Bologna. Cupids climb up vine branches, cupid's heads with wings and the like fill in wide bands of fronts of the arches enclosed by few decorative members, and which are ornamented by flat ornaments or if constructed with plain voussoirs, may be surrounded by a decorated arch. (Certosa near Pavia; buildings in Ferrara, Faenza, Bologna; Fig. 87).

The great arch spandrels are also here ornamented by medallions containing figures, the smaller ones having painted or relief ornaments or again small figures. With the wide archivolts of the great court of the Certosa near Pavia, their intersections are marked by small figures standing before them consoles, and the execution is still more richly treated by the use of polychromy. A peculiar decoration of the arch spandrel is effected, when cut stone, stucco and glazed terracotta alternate, so that the free supports, arches and horizontal mouldings are of cut stone, the spandrels are plastered,

and the plastered surfaces are filled by glazed terra cottas by Robbia, as done in such a splendid manner on the porticos of the great court of the Foundling Hospital there, at the H Hospital del Ceppo in Pistoja and other places. (Also see Pl.3).

316. Court Facades.

An attempt to shape the cross section of an angle pier in an appropriate way was made by Laurana in a quite analagous manner in the courts of the Palaces at Urbino and Gubbio (Fig. 540 478), where to be especially considered is the arrangement of the quarter columns on the inner side. The masters Laurana or Bontelli arranged the matter. A bay of the court facade of about the time from 1468-1482 is given by a representation in Section XXa, Palace Buildings, which shows in what a perfected manner Laurana understood how to "appreciate" the antique details. The court is one of the most beautiful in Renaissance art anywhere, and indeed has an impressive effect by the symmetry of the proportions and the beautiful details, and not least by the happily chosen scale, by whose grandeur one is actually amazed. Free and airy, not too high, appears this classical court design.

A peculiar attachment of quarter and half columns at the projecting and reentrant angles of the piers of the middle part of the central facade occurs on Palace Ducale at Genoa. Indeed somewhat too much of a good thing! (Fig. 478). On the contrary the court facades of Palace Piccolomini in Siena rather too little with their still almost mediaeval elevations. (Fig. 476).

But the Renaissance did not stop with the solution of simple problems, and what Jacob Burckhardt so strikingly stated, "that the courts of Roman palaces comprise all combinations conceivable, the most skilful pier construction with half columns and the most beautiful porticos" -- that applies to the courts of all the smaller and the larger cities of Italy.

Of these combinations the court of S. Maria della Pace must precede with its horizontal connection of the ascending supports in the upper story above the lower arched portico.

Likewise the solution of the arcades in the upper story in doubled smaller arches above the wide arches of the lower story, separated by a wide and rich ornamented frieze in Palace Bevilacqua at Bologna, is a logical architectural idea, which

542 is there charmingly expressed.

543 Elegant and yet massive is the effect of the court enclosed by four facades in the Cancellaria at Rome with the two similar porticos over each other, yet with graduated height of the columns, and above these the two mezzanine stories animated by small windows, which are externally combined into one story by colossal pilasters. The proportions between the dimensions of the area of the court and the height of the enclosing facades belong to the finest ever created.

Likewise grand and even more massive is the effect of the court of Palace Farnese at Rome with the porticos on piers in the lower and middle stories, with the closed walls of an upper story only animated by windows and triply divided pilasters. Both in this court design surrounded by high story facades, and imposing in effect, as well as in the small graceful courts filled with poetry and grace, Renaissance architecture stands alone and unsurpassed, where it gave new form to a primitive idea, required by changed conditions of life. The mediaeval court of the Castle of the Visconti in Pavia may be taken for a comparison in what concerns symmetry and the richness of details.

Also to beautiful smaller courts in private houses, particularly in Bergamo, attention was already directed by the corresponding illustrations.

317. Court Designs of Palladio.

Palladio made novel and interesting experiments in several of his buildings, when he sought to introduce the colossal order also in the internal courts. The massive columns extend through two stories, their shafts are subdivided by consoles or projecting piers, which have to receive the architrave and entablature of the gallery in the upper story (see Palace Porto in Vicenza, Fig. 479) -- a solution for necessity, but not organic. He also experimented with translations of Grecian-Roman atriums into the language of the Renaissance. His Tuscan and tetrastyle atrium, the atrium testudinatum (covered) -- a covered court with high skylight -- show (Fig. 479) what he desired. Worthy of consideration is the arrangement of ceilings and roofs for the buildings, which exhibit externally the colossal order and a two story arrangement in the interior. (Also see the arrangement in the Temple at Paestum,

Saukunst der Griechen, in Part II, Vol. 1 of the Handbuch).

318. Court Facades with coupled Columns.

With great charm and great dignity are the court facades with arcades on coupled columns, to which reference has already been made at Palace Marino in Milan, and whose details are 545 more fully shown in Fig. 480. The vertical lines of the columns are continued above the impost entablature in the form of consoles with lions' heads, which serve to a certain extent to enclose the interposed rectangular panels adorned with figure reliefs.

More by size, simplicity and beautiful materials with the rejection of all ornament, contrasted with the court of Palace Marino with its overrich decoration by ornaments and figure sculptures, is the effect of the magnificent courts of the Brera in Milan (Fig. 481) with their plain arches on the severe coupled columns.

Transformed into a flat surface, with rhythmic placing of half columns and interrupted piers, which only show plain ashlar masonry in the ground story, are employed the coupled columns, at least in idea, in the interestingly constructed facades of the palace Court at Caprarola (Figs. 483, 484). 546

Extending through two stories are the court facades of the Archiginnasio at Bologna. The porticos extending around it rest on square piers, that are subdivided in the ground story by pilasters of the Doric order on pedestals, and instead of triglyphs bear cartouches of arms in the frieze. The vertical subdivisions extend to the roof cornice, but not through this. The mouldings are simple and noble. (Fig. 485).

A variation has been made by the court facade of the University at Palermo in extending the verticals by the addition of small narrow piers between the columns of the second and third stories (Fig. 486). The conclusion, that the last is not always the best, applies to the court with spirally twisted columns, in Palace Marzano in Turin, that indeed originated under the influence of G. Guarini (Fig. 487).

A special charm is further presented by courts with the use of costly materials for their architectural parts (marble and granite). But also the colored, i.e., dark and bricks (Cremona and Bologna), ordinary limestone and sandstone remain in honor, as well as the primitive plastering. The animation of

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plastered surfaces by paintings (palaces in Lombardy, particularly the Palace in Milan, formerly Aliprandi-Taverna, now called Ponti, . colored elevation in Gruner), by sgraffitos or stucco-work (Palace Spada in Rome), contribute to make the internal space comfortable and homelike, as a quiet and cool stopping place in the hot days of summer.

319. Decoration and Closure of Courts.

Arrangements of flowers and plants within palace courts appears to be excluded, since only stone slab and paved floors are found with a slope toward the middle for removing rainwater. But a decoration by statues, vases, potted plants and fountains is still possible, as Fig. 488 shows. In the court of Palace Doga stand the bronze well curbs of Alfonso Alberga-ti (1559) and of Nicolo de Conti (1556), and in those of Palace Vecchio and Palace Gondi in Florence are the pretty little draw wells.

Metal latticed gates as closures of the court arcades or of the entrances to the porticos are found indeed; but they mostly do not belong to the good epoch, or they lack all higher art form. The best still preserved there are found in the churches as chapel closures in bronze and iron. (S. Maria in Organo in Verona has precious little grilles 3.3 ft. high from the 17 th century, that merit consideration for beauty of composition and grace of workmanship. Others are found in S. Petronio at Bologna and in Rome.). 188

Note 188. Beautiful illustrations of metal gates from the 15 th and 16 th centuries, from Rome, Lodi and Milan are to be found in Gruner, Pl. 62. Other references are given under Ecclesiastical Buildings.

549 But the most magnificent closure will always be that on the Loggetta near the Campanile on the piazzetta in Venice, the work of Antonio Gai, ornamented by figures and trophies of arms. (Fig. 489). Another and simpler grille with spears, ovals and scrolls is to be found at the main entrance of the Arsenal in Venice, etc.

SECTION XVIII. INTERNAL ARCHITECTURE.

Enclosures and Leaves of Doors, Mode of Construction, Materials, Wall Paneling, Tapestries and Painted Wall Surfaces, Treatment of Ceilings, Mode of Execution, Wooden and Vaulted Ceilings, Floors, Fireplaces, Privies, House Baths.

The internal architecture of the Renaissance ought and cannot here busy itself with all the technical details in the building, which belonged to it at that time, and that is especially true for the work of the times, glaziers and locksmiths, so far as these concern the fixtures of windows and doors. Likewise certain works of installation are excluded, which form a chief part of our modern internal architecture. The artistic fixtures and fastenings for the windows and also the doors belong to the French and not the Italian Renaissance, and even these only late became a profitable exercise of art industry. The same is true for artistic glazing. Whatever is necessary was said in Section XVI (Windows and Doorways), of the fitness, the charm of material and its basis. Indeed also the climatic conditions of the country did not so strongly lead to a refined treatment of the articles mentioned, (arrangements for closing windows), as on this side of the Alps.

320. Doors to Passages and Rooms.

Doorway openings in the interior of the dwelling always form an upright rectangle averaging 1 to 2, sometimes a little more or a little less. The enclosures are either plain or membered after the manner of stone window enclosures, thus showing the architrave like a band as in antiquity, with and without ears (for example, with such are the doorway enclosures in the hall di Leone X in Palace Vecchio at Florence), tolerably wide, this frequently amounting to $1/4$ or $1/5$ of the clear width of the doorway opening. More richly treated are the architraves with similar accessories, as mentioned for windows, by consoles with straight or pediment caps, both often merely painted in addition to the architrave in relief (doorway at the end of the loggia of Raphael in the Vatican) or enclosed by columns with antique entablature and pediment (hall de' Duomo in Palace Vecchio at Florence), or in the most costly manner in the antechamber of Palace Doge in Venice with figures reclining on the pediment cornices. The enclosures are not always of the same material as the leaves of the

doors, but more frequently, with the omission of all mouldings, are made of the most costly and richly colored kinds of marble. (Palace Pitti in Florence, antichamber of Palace Doge). The play of its colors and veining makes mouldings superfluous.

540 Models, beautiful and appropriate, are treated and ornamented the doorways of the salon in the Palace at Urbino at a relatively early time of the Renaissance (1468-1482). They merely enclose the openings and are free from all bombastic accessories, with which the later epochs were so lavish. The accompanying apparatus of pilasters, columns and accessories does not appear here. With just propriety and quiet is the problem solved. Next the opening is first the narrow band like a fillet, (see the doorway in the throne hall), followed by a broad decorated band, richly ornamented by fruits and emblems, and then again a narrow enclosing fillet, decorated but slightly, above being a horizontal crowning frieze with festoons of fruits or palm ornaments, as the highest and crowning termination being a slightly obtrusive cap. (Fig. 443, Doorway di Guerra).

According to the clear width, the openings were closed by single or folding doors, constructed of light and of heavy kinds of wood, divided after the antique custom into frame and panels. Those of the time preceding the Renaissance do not show on doors and coffered proper cabinet work, but rather only grooved carpentry, where the surfaces are mostly decorated by paintings and are carelessly crossed by iron fixtures. In the 14th century first appears the proper framed cabinet work instead of grooving. The panels extending between thicker frames then first have the width of a board (6.7 to 9.8 ins).

Serlio gives in Book IV (Chap. 10) of his Architecture single doors with four, five and six panels, just as they have continued in use until today, and folding doors with three to five panels in each leaf. In both cases the leaves swing on hinge straps.

As materials for richer doors are preferred walnut or chestnut, pearwood and cypress wood being more used as inlays; still the coniferous (larches) are not excluded for ordinary conditions.

The fixtures disappear in the woodwork, and only the knuckles

of the hinges remain visible; the fastening is either not indicated or only by small key escutcheons. (Doors of Vatican loggias, door of hall in Palace del Comune in San Savino).

So-called doubling occurs on great and small doors of the early Renaissance, by which ^{on} a flush framed paneling is planted an intersecting framework, externally forming rectangular, square or lozenge-shaped panels. These then mostly exhibit the fastenings and also iron nails set in a definite arrangement, plain or ornamented, as for example on a small door in the court of S. Croce in Florence, on the larger doors of Chapel Colleoni and of the former Medici Bank in Milan. For the larger leaves of doors is then preferably taken the lighter larch wood; there the great leaves of doors swing on very simple and rudely wrought pivots, or fit into sockets like the antique stone or metal doors. The doors of medium size in the state apartments of Palace Doge at Venice partly swing with hinge straps on pins; they are also partly fitted with semigothic longitudinal iron bands, which are then entirely gilded. For vertical and horizontal fastening bars for the doors mentioned, men restricted themselves to the simplest form for the purpose and omitted all ornament; only the closing knobs and handles of keys exhibit an artistic development.¹⁸⁹

For the simplest treatment, the doors remain entirely plain, both in the framework and the panels, where the changes from one structural wood to another is made by mouldings and bands, or for a richer treatment the framework remains plain and the panels are covered by carvings (Loggias of the Vatican), or both framework and panels are carved, the intersections beset by rosettes, as shown in the finest manner by the already mentioned door of the Palace in Monte San Savino.¹⁸⁹ More dignified and nobler is the treatment, if framework and panels remain plain, only the mouldings being ornamented with the addition of the rosettes. As an example serves the simple and noble door of Library Laurenziana in Florence; each leaf there has three panels of equal size of walnut wood. Here likewise belong various doors in Raphael's Stanze with five and six panels with frets and branches on the frame, eggs and heart leaves on the mouldings, as well as on the astragals and quarter rounds.¹⁹⁰

Note 189. Published in von Geymüller.

Note 190. See Redterbacher, R. Vorbilder für Tischlerarbeiten. Collection of selected cabinet works of the Renaissance in Italy. Part 1. Karlsruhe. 1875. -- Unfortunately in this otherwise faithful publication is not given everything, that one might desire to know in construction; nowhere the thickness of the wood, nowhere the mode of connection, and nowhere anything on how and where the leaves shut!

A beautiful division is acquired by folding doors by inserted round pieces, that are decorated by lions' heads with ring knockers in their mouths, as exhibited on the entrance door at one end of Raphael's Loggias, a masterpiece of Barile, in what composition and carving of ornament requires. The circular piece, the adjacent longitudinal paneling, and the entire door with its surroundings are given in Figs. 490, 491, 492.

The woods are mostly left in natural colors, oiled and varnished, or they are also stained reddish-brown, yellow or dark brown and waxed.

Relief decoration for frames and panels was preceded by intarsia, i.e., inlaid work in woods of different colors, to which are also added frequently inlays of metal, mother of pearl, ivory and ebony. Of metals came into use; gold, silver, bronze, copper and tin, to which might be added precious stones as inlays.

(colored woods in combination with metal inlays to a small extent are found on the backs of choir stalls, for example, with intarsias and wonderfully graduated in color, in S. Domenico at Bologna, and indeed the most beautiful pieces in the choir of the Church S. Maria Maggiore and in Chapel Colleoni at Bergamo).

This art extends back into high antiquity; it reappears in the middle ages; we find in France in the inventories of Charles V (1380) and of the Duke de Berry (1416) pieces of furniture executed in this manner; we see it in Italy in the earliest time of the Renaissance, already in the highest degree of perfection.

Yet we must here distinguish between incrustation and marquetry. In the former, the wood is removed to a certain depth according to the drawing, then filled with a more or less costly material; in the second, veneers of wood, mother of pearl,

copper, etc. are laid on each other and sawed through at the same time, then inserted in each other according to the design. Thus are obtained intarsia and counter-intarsai, so that one may have the same design in light on dark ground and the reverse. The veneers are placed on the structural parts.¹⁹¹

Note 191. Drawings of intarsias of full size are to be found in Gruner, L.; *Specimens of Ornamental Art*, London. 1850, and in Teirich, V; *Ornamente aus die Blüthezeit der Italiensche Renaissance*. Vienna. 1872. The accompanying text on the occurrence and the history of intarsias in Italy until the 17th century gives interesting conclusions. Likewise the explanation of the technics of intarsias is clear. The veneers have a thickness of 1/16 inch and the wood covered is 3/8 ins.

Until the end of the 14th century, marquetrys consist of geometrical patterns, mostly executed in black and white; but after the beginning of the 15th century by the help of stained woods, landscapes, architectural interiors and historical pictures are produced, to which is added all the richness of wood carving and of metal inlays. Tortoise shell and gilded bronze, the so-called Boule furniture. (Andre Charles Boule. 17th century).

A final degree of ornamentation was received by the leaves of doors by painting in different colors with the gilding of certain parts, use of this being gladly made by the Barocco and Rococo. (Color of wood with gold, or white and gold, but also green, red and black coatings with colored varnishes, the ornaments being lighted with gold). The high Renaissance employed in painting, grotesques, bouquets of flowers, figure compositions, still life and landscapes, which cover the usually large panels.

The structural parts are properly joined together, treated and ornamented. We do not find aberrations, such as occur in the German Renaissance, for example, where the dividing member is formed as a pilaster or half column, that instead of being fixed and supporting, describes a quadrant! When covering bands are generally used for folding doors, they are formed without accenting the top or bottom. (See the door in the Vatican Loggias).

321. Paneling.

Following the doors is the paneling of the walls, that may extend to the ceiling, or only cover a portion thereof to a certain height, and is carried around the room to the top of the window bench or is only quite low. Wainscot and base are with us the usual designations of both kinds of paneling. Wainscot on the walls, also termed *woodwork* by the French, or paneling in north Germany. When this paneling does not reach the ceiling or to the middle, it commonly forms the base for the ascending wall-decoration. The division of the walls of living rooms into base, dado with or without subdivision into panels and frieze with a cap moulding is as old as architecture itself. All the peoples of antiquity proceeded according to the same principles, and after them the middle ages and the Renaissance, and the most recent time also retains them. But not always was the procedure in the execution of paneling according to the same ground idea. The ancients, likewise the Byzantines, Arabs, and the masters of the Romanesque architecture conceived it as a sort of tapestry decoration, or in the division into frame and panels, i.e., in the adoption of panel work, they proceeded in accordance with the principle, that Gottfried Semper clothes in the words:--¹⁹² "The framework and tracery must never overpass the paneling, i.e., the filling, the latter must remain the chief thing, the proper motive, and accordingly must be treated richly and like tapestry; the enclosing structural elements must serve it, never dominate it.

Note 192. *Der Stil*. Vol. 2. p. 235.

To this ground principle the Gothic also adhered in the first period, while it did not overpass the proper limits of the structural; afterwards in covering the wall, it fell into the monotonous form of blind tracery.

The Renaissance rejected this pattern and returned to the ancient artistic mode, when for this internal decoration participation was again offered to the sculptor and painter. As already stated, it adhered thereto even for the doors constructed on the same basis.

Likewise for this, frames and panels in costly woods were covered by marquetrys, paintings and gilding, left in the natural color of the wood, or covered by uniform coatings of definite color. Thus proceeded the Italian masters engaged

in France (Serlio, Primaticcio and Others), as well as the native masters (Chateaus in Fontainebleau, S. Germain, Anet and Gaillon).

The entire 17th century in France cherished the fashion to ornament the paneling by gilding and painting. Marshal Richelieu had the panels of the base decorated with obscenities ("very immodest figures in relief at the centre of each panel") -- the unworthy end of an otherwise good means of ornamentation.

555 In the year 1751 instead of wooden wainscot appeared glass painted on the back and all sorts of genuine and imitated marbles. With the adoption of Gobelin tapestry as a wall decoration, paneling must generally disappear or sink to wainscot and low base.

556 The ground idea of constructing the wainscoting with large panels is expressed in the representations of Palace Doge at Venice. (See hall del Collegio, hall del Senato, hall dei Maggior Consiglio and the Anticamera). There pilasters generally separate the plain red panes of the woodwork, whose ornamental members are enriched by gilding. The greatest simplicity prevails in the cabinet-work, in the wainscot of these apartments, that are furnished with simple seats, above which is developed the greatest decorative splendor ever created. Just this contrast between the simple lower architecture and the magnificent upper architecture perhaps allows the latter to appear so much the more effectively and grandly. We find a similar arrangement in the hall de' Dugento of Palace Vecchio in Florence. What other time than the Renaissance could have created such works? What other art ever had at command this wealth of means of expression and such masters!

As a work of the elevated style must be designated the equipment of the working room of a prince, the Duke of Urbino, in which the paneling exhibits the most perfect and richest intarsias. There ranks therewith the seats, desk, doors and the gallery of the Cambio in Perugia (Fig. 493) executed by Domenico del Tasso (1490-1498), A. Bencivieni da Mercatello and A. Masi (1562), which fills the harmonious, moderately large and vaulted room with the ceiling paintings of Perugino (1499). "No official in the world is seated so magnificently as formerly the exchange judge of the capital of Umbria," said Burckhardt, and with justice.

322. Wall paneling from Pistoja.

To the 16th century belongs a great work in seats, more architectural than decorative, of which eight days still exist in the great hall of Palace Pretorio in Pistoja, a splendid work, but not originally intended for this place, but rather stood in the choir of the Sapienza, according to an inscription attached to the seat. The too richly ornamented columns standing on consoles, the overloaded entablature, the richly carved frieze with panels contrast peculiarly with the plain panels, which were treated otherwise before the work changed its location (Fig. 494). Cabinet work and together with it inlaid woodwork (the art of intarsia) was also particularly practised, "largely and nobly," in Bergamo.

323. Ornamentation of the Borgia Apartments in the Vatican.

The wall surfaces in living rooms were smoothly plastered, painted and stuccoed, hung with tapestries or leather in elegant rooms, particularly in the later time, with fabrics, woven cloths of all sorts, and finally covered with painted or printed paper. Some rooms of the Castle at Milan still show the mediaeval manner of treating wall surfaces, for example, patterns appear with red medallions arranged side by side and ornamented by arms, and are uniformly extended over walls and the vaulted ceiling, and the like. The Borgia Apartments in the Vatican are again made accessible, and give us a reliable illustration of the decoration of wall surfaces on smooth plaster. In the hall dei Misteri the walls are divided in panels, that extend down to the floor (thus the walls lack a base), and these are separated by pilasters with panels of variegated grotesques on a gold ground. The panels themselves were indeed painted with golden lines on a blue and green ground, and have been restored in this sense. In the hall dei Santi a high wainscot with a projecting row of seats forms the plinth of the wall; it is subdivided into two rows of square panels over each other, whose grounds are alternately decorated by ornaments and by architectural views. Above to the ceiling cornice is painted a tapestry pattern. In the hall delle Arti liberali is executed a peculiar subdivision into panels with brightly colored geometrical figures, medallions in the Frieze with scrolls, such as we find again in

the Early Christian mosaic pavements in churches, and in the great hall dei Pontefici are arranged wall paintings with arabesque enclosures, together with panels having tapestry patterns. In the hall del Credo then again occur divisions into panels with tapestries of geometrical patterns, in the middle being a medallion with the papal arms.

324. Painted Walls.

Wall paintings in fresco (1481) separated from each other or enclosed by pilasters or arabesque borders, which are mostly painted in gray on gray or brown on brown with gold ornamentation, to which give place about 10 years later the borders with grotesques (Borgia Apartments, 1493), succeed these tapestries with linear ornaments or flowers. Executed in the most perfect manner is such a wall decoration in the middle hall of the Royal Villa Poggio a Cajano, in the hall dei Dugento (or Ducento = Senate of 200 in Florence) of Palace Vecchio, and also there in the hall dell'Udienza above a painted imitation marble base with panels, grotesque ornaments on a light ground covering the entire wall surfaces in the Quartiere di Leone X. Instead of figure compositions sometimes appear also views of cities and landscapes (Palace Vecchio). In Venice and Verona (Vigna Bocca-Trezza), instead of the great figures commencing directly below the ceiling beams is arranged a bright figure frieze 8.56 ft. high with a dark ground, that extends around the entire room, when the wall surfaces are covered by a plain coating of a single color.

In a room of Casa Vasari in Arezzo they are divided into two parts in height, the lower covered by paneling and the upper by landscapes in painted borders surrounded by festoons; the allegorical figures there appear rather as additions.

By the uncovering of the Baths of Titus, the mode of decoration found there, the combination of stucco and painting, was adopted by the Renaissance masters. As the most beautiful example of the success of the new method are to be mentioned the decorations of the wall surfaces of the Vatican Loggias. As the ornamentation of a room where the paintings are enclosed by architectural strongly moulded stucco frames, the tops of the window recesses also being architecturally moulded, are ornamented by arms, cartouches, little reclining figures, garlands of fruits, medallions and busts, may be menti-

mentioned the hall di Leone X in the apartments di Leone X of Palace Vecchio in Florence.

325. Introduction of Gobelins Tapestry.

Painted walls disappeared when the Gobelins tapestries became common, that soon supplanted all other modes of decoration, where the means permitted, and where men could or would follow the fashion; and it is not to be denied, that halls and living rooms first became somewhat warm and homelike by their use, which naturally ensured great success to them.

These were fabrics woven with woolen yarn (twisted), mixed with gold and silk; the oldest were made in Arras, from which they derived the name of Arrazzi in Italy. Already in 1380 was mentioned in the inventory of Charles V a representation of a battle -- "a great cloth of work of Arras" -- ; in the accounts of the prioress of Hospital Hotel Dieu in Paris (1395) are included fabrics of Arras, and what was called "cloth of Arras" in the 14th century, was nothing else than "tapestry with high warp." In the inventory of the Bastille in 1420 are named a bed covering on black ground, woolen tapestry of Arras, and such others of silk and gold.

The manufacture was stopped by the siege and the horrible treatment of the city by Louis XI, and at the end of the 16th century tapestry in Arras had entirely ended.

Two Flemings, de Commans and de la Planche, introduced it into France in 1625, and by an edict of 1667 the manufacture was taken in charge by the State.

The tapestries of Raphael (1515-1516), intended for the lower part of the walls without paintings in the Sistine Chapel, were executed in Brussels in wool, silk and gold. Copies of these tapestries adorned until 1859 the walls of the rooms dell'Imperatrice in Corte Reale at Mantua (now in Vienna).

577 A representation of a Gobelins tapestry with wide border of ornaments and little figures as characteristic of the treatment of this decoration by fabrics, from the time of Louis XIV of France is given by Fig. 495. 193 The manner of placing a Gobelins tapestry is to be seen in the "hall del Museo" in Parma, which exhibits the Medici arms in the left side border. Likewise it is to be learned there, how the corresponding pieces for use and decoration were exhibited in halls, as hangings at windows, tables, chairs, great fireplaces, etc.

Note 193. From Howard, H. *Dictionnaire de l'Ameublement et de Decoration*.

In the middle of the 16th century "Florentine Arras" excelled, taking up the manufacture of every kind of arras with considerable orders from Ferrara, Venice and Bergamo. (Cathedral S. Maria Maggiore). The cartoons for these, which were all enclosed by borders, almost without exception came from the studio of A. Allori until 1582. A valuable collection of these picture tapestries, of products of Florentine tapestry weaving, old fabrics and embroidery from the 14th and 15th centuries, as well as articles made of velvet, gold brocade and damask from the 14th and 15th centuries, is arranged in the upper rooms of the Archaeological Museum in Florence.

Florentine tapestry weaving came under Duke Cosimo I in the year 1545 through Nic. Karcher and Jan van Root from Brussels to Florence, and it ended with the fall of the house in 1737. As master of the cartoons besides Allori are mentioned also Bronzino, Salviati and Bacchiacci, and finally also P. Fevere from Paris, who brought the imitation of paintings by the Gobelins to the highest perfection, and conventionalized it to degeneration. See also the spirited little Essay of Professor Dr. Marc Rosenberg at the opening of the Gobelins exhibition in Karlsruhe on May 28, 1907. "New Gobelins can scarcely be added, for all attempts to make them by machines have failed, and a work in which a man produces a half yard in a year can no longer find a commercial basis in the revolutionizing of working conditions in our time. Our increase only consists of one gobelins annually produced in Paris, and of one completed every 25 years in the papal manufactory.

The hangings at first mentioned of stamped, painted and gilded leather, that indeed notable material, disappeared about the end of the 16th century from courtly circles, but maintained itself in those of the citizens and of the lower nobility until in the 17th and even the 18th centuries; they were still mentioned there in 1659 and 1765.

326. Hangings of Leather, Brocade, Damask and Paper.

In the inventory of Catherine de Medici (1589) were still mentioned red, green, blue, orange and variously colored leather hangings, also black with silver, to which belonged div-

dividing strips, that were decorated by devices, monograms and arms.

In the second half of the 17th century were the walls covered with brocade, damask of different colors, velvet, satin etc., and there were mentioned brocade with gold, silver and silk grounds, Florentine brocade, brocatello from China and from Flanders, Lyons and Venice.

The green damasks were preferred by magistrates, the yellow by artists and actors, and this continued until in the second half of the 18th century. About the middle of this century was introduced from the East painted linen, which was retained until nearly the time of the French revolution. Besides this painted papers were common, which were made in France as beautiful as the imported oriental, and which extend back to 1675.

With the 19th century ceased the beautiful luxury of cloth hangings of walls, and generally gave place to printed paper. "The new conditions of our social life, the uncertainty of our furnishing and our tastes, the continual transformations of our dwellings and our fortunes, sufficiently explain the sign favor enjoyed by it," says Havard (*Dictionnaire de l'Aménagement et de Decoration* from the 18th century to our time. Paris. 1890), and we likewise complain of the uncertainty in matters of good taste today.

327. Beam Ceilings.

For the ceilings of living rooms and of state apartments prevail two ground forms produced by the difference of the materials; horizontal wooden beam ceilings and vaulted masonry ceilings. For the former during the early period was retained the tasteless mediaeval type, whose beams extend with narrow intervals from wall to wall, or are laid from girder to girder, according to the size or depth of the room. The beams therefore as frequently lie parallel to the wall containing the windows as at right angles to it. In many Veronese and Venetian painted ceilings the spaces between the beams of small dimensions are not greater than the width of the beams. The beams themselves are covered by boards, whose joints are concealed by battens; such strips also extend along the sides of the beams, so that small shallow coffers are formed. The transition from the ceiling to the wall is made by a richly

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carved wooden cornice, consisting of cyma, quarter round, dentil band and ogee moulding, below which then extends a picture frieze or the plain wall panels, as stated in the preceding Article. These wooden ceilings, mostly in a half mediaeval way, were still painted with full colors, the plain wooden surfaces being of a single reddish brown color, also frequently covered by brightly colored flat ornaments in blue, yellow, red, white, black and green colors. In a hall with two windows in a Florentine house 19 ft. deep, the ceiling is divided in two parts by a beam 7.1 ins. wide; the small beams measure 3.6 ins. square and rest on the larger beam and on the division wall with a free span of 8.7 ft., are covered by boards, and the joints are concealed by plain rectangular battens, on them being laid a layer of mortar and tiles as the floor for the upper room. With the joint battens 1.8 ins. wide is then produced a kind of paneling of the ceiling.

This simplest treatment was then followed by the great coffered ceilings of through beams, arranged with intermediate timbers inserted at right angles, and richly covered by carvings, a mode of treatment of the ceiling, "in whose magnificence the Renaissance knows no limit." Beautiful examples of such wooden ceilings with square coffers and rosettes on the panel, with the richest carved ornamentation and rosettes set on the intersections, are found in the frequently mentioned hall de' Ducento and in other rooms of Palace Vecchio, also in Palace Gondi, and simpler and lighter in Palace Guadagni in Florence.

With the twofold accenting of the series of beams and of the intersecting timbers, the ceilings attained a high degree of richness when large and small panels alternate with each other, but still always properly constructed. A classical example of this kind is a ceiling constructed of fir wood and brightly painted in the great hall of Palace Massimo at Rome, 194 with white rosettes on a deep blue ground and accompanying brightly colored ornaments.

Note 194. See Paterouilly. Vol. 999.

But the subdivisions of the ceiling resulting from the construction were abandoned in time and freer divisions appeared in their places; hexagonal and octagonal coffers are arranged beside each other and extended like a tapestry stretched over

of the room. Square and acute-angled are inserted between the polygons, that are again compelled to yield to round forms of different kinds. Geometrical figures are combined in favorite general designs.

In Book IV of his "Architecture" (Chap. 12; On plane ceilings of wood and on their ornaments) Serlio gives on 9 pages a great number of motives for such ceilings, from the simplest to the richest type, and proceeds thus:-- The ancients called such ceilings "lacunarii" (paneled ceilings); Romans now call them "palchi"; in Florence, Bologna and the entire Romagna men say "tasselli" of the them, and in Venice they are called "travementi" and "soffitada." Likewise in these free forms Peruzzi has executed some ceilings in Palace Massimi at Rome in the most charming manner, that by color and gilding (white and gold, the ground of the octagonal coffers being blue, of the square ones red and of the long panels green) reached a climax of magnificence. These heavy coffered ceilings are always intended for strongly colored decorated walls, the richest of which is indeed preserved in the hall de' Gigli of Palace Vecchio at Florence. Great wooden coffered ceilings, chiefly executed in blue and gold are to be particularly mentioned in the Castle at Trient. Left in the natural color of the wood, without any addition of bright color, is the wooden ceiling of Library Laurentiana at Florence, with its partly capricious and unquiet details. Uncolored likewise is the magnificent ceiling in the Badia at Florence, which as a church ceiling is only mentioned here on account of the fact. For the ceilings of the early Renaissance in palace apartments, the decoration is richer and more fanciful, so that the ornament predominates. Charming examples of this kind are the ceilings in the hall de' Busti and chamber a Letto in Palace Doge at Venice; gold on blue, executed with the greatest magnificence -- where rosettes occur instead of coffers. A painted coffered ceiling of the good time is to be found in the upper story of the School del Santo in Padua.

First in the rooms of Palace Doge at Venice, instead of this always architecturally effective wooden ceiling, occurs another and novel conception, whose large shapes of carved and often strongly Barocco gilded frames are formed on the ceiling, by which a "naturalistic illusion" is attempted, when

the observer is expected to view the painted stories within the gold frames as actual occurrences. But thus only the great principal ones are executed, while the painting in the subordinate panels is treated as gray on gray, brown on brown, or like bronze or copper.

The provision of such quiet points in the decoration otherwise in magnificent colors with the massive and rich gilded frames is well arranged, and it always heightens the general effect of these stately ceilings, which belong to the most complete of their time.

Gilded carvings in a peculiar distribution form the heavy frames, which enclose masterpieces of painting of the highest rank, creations of a Paolo Veronese, whose charm can be rejected by no man, whether gifted or not, and still I may subscribe to the saying of Burckhardt:-- "The stately lower wainscoting, the doors with their statues on the pediment caps, the pompous fireplaces with allegorical figures above and merole atlantes beneath complete the impression of authority, which prevails in these halls. But for a comforting and pure harmony, this will rather be found in the rooms of the time of Raphael."

328. Vaulted Ceilings.

Vaulted ceilings are mostly restricted to the forms of cloister and mirror vaults, with and without lunettes, which are most common to the Renaissance. But the tunnel vault is also justified for porticos and lofty halls (Poggio a Cajano), and where, as for example for loggias cross vaults are employed (Palace Doria in Genoa), this only occurred with the removal of their groins, so as to have a free field in the decoration of the surface. Only the transition style and the earliest period leave the cross vault in the true mediaeval form, and also decorate it after mediaeval custom, when the dividing ribs and compartments are treated separately, when the latter are adorned by medallions and grotesque work. The vault surfaces for cloister and mirror vaults are terminated below by impost cornices; they separate the vertical wall from the ascending vault, which leads to the great ceiling panel. This is either enclosed by a geometrical, or in the Barocco time, by a capricious frame.

563 Repeated on the ceiling in a more thorough and spirited man-

mayyer is what already makes itself felt in the decoration of the wall; the combination of stucco and painting, wherein the ornamental art of the Renaissance soars to the highest undertakings. According to the time and the means, we find the ceilings sometimes merely light or painted in two colors, then rising to the richest charm of color with the assistance of gilding.

Likewise here prevails at first more severe architectural subdivision, then the greatest freedom for painting, as for those of Pecetti in the corridors of the Uffizi at Florence, in the porticos of Villa Garreggi and elsewhere.

Genoa possesses in the rooms of Palace Boria and in many other palaces examples of the most magnificent type. The Borgia apartments in the Vatican exhibit model examples in their halls. The Farnesina, the gallery of Palace Farnese, the Loggias of the Vatican, as well as Villa Madama near Rome present the noblest, that human genius has ever created in this domain.

The late time is generally satisfied with a light coloring in the rooms of palaces, or by the natural color of the material, and it arranges in the middle of the ceiling a great and variously colored oil or fresco painting, as Tiepolo did in a splendid manner in the great hall of Palace Canossa in Verona. From the Barocco time the ceilings executed by Pietro da Cortona and Guido Parigi (1596-1669) in the upper story of Palace Pitti at Florence deserve all praise with their stucco-work and pictures in the richest gilded frames; these transform the halls covered by them into state apartments of the grand style.

329. Floors.

Above the ceilings lie the floors, which may be constructed on solid vaults by filling the spandrels and a smooth coating of mortar, or there is arranged a separate and independent support for receiving the floors, or the ceiling and floor are one, as generally the case with those constructed of wooden beams.

The coverings were most simply and cheaply made of plaster or cement, of marble slabs or mosaic for richer buildings, or of burnished tiles of various shapes or glazed tiles. Made of planks in the earlier time, in the later time men returned

to wooden construction, but in the form of parquetry.

Floors in "Venetian terrazzo" in variegated flat patterns are to be found in Palace del Te, for example. When mosaic floors are employed, the well known ornaments from the Early Christian and Cosmati times are repeated, where marble slabs were used, those of two or three different colors being employed. Most commonly in the time of the early Renaissance were employed in private houses and also palaces the usual burned red bricks, and these were laid in various patterns on edge or flat in a bed of mortar.

But the most favorite type was the setting of the bricks in diagonal herring-bone patterns, that appear everywhere, even in churches, chapels and in monasteries (*opus spicatum*). We find them in the Borgia apartments of the Vatican, in the Duke's Palace at Urbino, in the Villa Papa Giulio at Rome, etc, where also occur divisions by bands into triangular and square panels, in which the bricks are then set parallel to the walls. Besides those normal shapes also occur special tiles of large and small square shape with also elongated hexagons, that are combined in various designs (Fig. 496).

A tile floor in two colors, of light yellow and dark red or burned clay, repeating the design of the ceiling but evidently with a changed surface, is executed in the library Laurentiana at Florence. It was here desired to avoid all great luxury, which might have diverted attention from the decorations of the wall and ceiling.

Greater charm and richness of color was again afforded by glazed tiles, that on account of their small durability are only preserved to us in scarce remains. In the loggias of the Vatican vestiges of glazing may only be recognized on the tiles lying close to the outer walls. In the Borgia apartments from the time of Alexander VI, the ancient tiles were still found in three halls, and were completed at the restoration. Beautiful round and square tiles (*maiolica tiles*) are preserved in the Church S. Caterina, which are given in Fig. 497, after drawings by Weisbach and Lottermoser. Also these are merely simple in design. In a small room of Quartiere di Leone X at Florence, laid in hexagonal and octagonal tiles, then in Villa Imperiale near Pesaro, and in the library at Siena are still preserved ancient specimens. We find them in

566 greater number in many chapels at Venice, in Siena, Rome, Parma,¹⁹⁵ Florence and other places, dated from the times of 1458, 1471, 1482, 1504 and 1510.

Note 195. "Majolica tiles from a pavement constructed in the monastery di San Paolo dei Benedetti Badessa in 1471-1482" are to be found in numbers in the Museum at Parma. Those dating from the time of the early Renaissance are mostly colored blue and white, and as a design bear sometimes a female, sometimes a male portrait, but also bright flowers on a white ground, as well as small entire figures. As a covering majolica tiles covered by cupids were employed on a wall arch in the former Monastery di San Paolo (16th century). These are likewise now preserved in the same Museum.

Tiles in varied colors were also made by the Roboias in Florence for the Vatican Loggias in Rome. In Naples, but particularly in all Sicily in the better dwellings, glazed tiles in varied colors until the present day form a favorite, beautiful and durable floor covering, safe from receiving dust and vermin.

In Genoa we find glazed tiles frequently employed as coverings of walls in the narrow stairways of the dwellings of citizens, beautifully and correctly designed in oriental patterns, with a splendid use of color and imitating tapestry patterns, executed as imitations of Spanish Azulejos (majolica tiles).

Already in the 14th century, floors of wooden planks were executed in France and indeed also in Italy, besides the clay tiles; but first in the 17th century they became common in the form of the present parquetry, and replaced tile floors in all elegant residences.¹⁹⁶ "Her sisters were in chambers with parquetry floors, where they had beds more after the fashion, and mirrors in which they could see themselves from n head to foot," says Perrault in his story of Cinderella. If one cannot have everything, one must be satisfied with parquetry and a modern name, writes Madame de Sevigné. In 1692 "Livre Commode" gives a pattern plate of parquetry, and in the 18th century (1782) dwellings with parquetry floors are advertised for rent. In the Comptes des Bastiments du Roy are mentioned wood parquetry by a cabinet maker for the great pavilion of the Tuileries (1679).

Note 196. At the time of the dominance of the Renaissance in France, Italian artists and artisans were engaged in great number, and were employed in the highest positions (Primaticcio). The original statements concerning certain arrangements and technical procedures are less known in Italy, than is the case in France. Therefore we frequently refer to French sources in the assumption, that their meaning must also determine similar cases in Italy. Aside from this, that in the museums of the Louvre, of Cluny, in Troyes, Grenoble, Auxerre etc., specimens of clay tiles are sufficiently preserved, that we know such were in use from the 8 th century onward in France, and that clay tiles "in relief" replaced the smooth pieces in the 14 th century, which still remained in use till in the 15 th century. The procedure was as follows-- "Tiles were used, whose upper surface was first stamped, then the stamped recesses were filled with clay of a different color, the whole then being covered by a lead glaze." These inlaid tiles disappeared and gave place to painted tiles in France toward the end of the 14 th century. Hollanders brought the fashion into the country.

Philip the Bold, Duke of Burgundy, in the year 1391 made an agreement with two "makers of plain and ornamental tiles" for the delivery of such tiles. The two "workmen" were a certain Jehan de Monstier d'Ypres and a Jehan le Voleur (thief).

In Rouen in 1442 were mentioned faience tile floors, and these tiles were laid in Paris in Mansion Soisson (1481), also Catherine de Medici ordered them. The change occurred in Italy and France at about the same time.

330. Fireplaces.

Serlio says in Chapter 26 of his Book VII on Architecture:-- "Fireplaces are truly the great ornaments of all dwellings," and he gives four examples of such, as a first in Corinthian style, a second in bastard Doric form, a third in pure Doric, and a fourth in a mixed Tuscan style with rustication.

In Book IV he shows some fanciful compositions of fireplaces. He likewise states, that in France the smoke flue was always carried up vertically and served several fireplaces at the same time, wherefore it is advisable to decorate it up to the ceiling. In halls it must further be effective by the magnificence of its appearance. In this sense as appearing

as a fixed snowpiece in the room, it is everywhere conceived from the early time of the Renaissance until its decadence.

567 In Palace Gondi in Florence in the severe style the state fireplace extends rather more than 6.6 ft. high between two single doors in the division wall of a hall with coffered wooden ceiling. Two richly ornamented balusters flank the opening and support a high frieze with naiads and tritons in moderately high relief, which is terminated by a covering cornice, at whose ends stand small antique figures, between which is suspended the great shield of arms of the Gondi with the bent arm and the mace in its hand. As a charming example must also be mentioned the small fireplace in the House of Vasari in Arezzo, enclosed by volutes and triglyph-frieze, and as the greatest Florentine snowpiece, the fireplace of Palace Borgherini, now to be found in Museum Nazionale (Bargello), constructed after the same ground idea as the Gondi fireplace, 568 only that instead of the balusters, here are placed little columns like Corinthian with richly ornamented shafts, that support a complete cornice, beneath which extends the beautiful figure frieze in high relief. Sphinxes crown the ends; seated cupids support the family arms (Fig. 498).

Severely beautiful fireplaces are further found in the Palace at Urbino ¹⁹⁷ with remaining polychromatic ornamentation, 569 where the friezes are particularly notable, when cupids with gilded hair and wings project from an azure ground, while the ornaments are in blue and gold and the other architectural parts are left white.

Note 197. Published in Arnold, F. Der herzogliche Palast in Urbino. Pls. 42-47. Leipzig. 1857.

Simpler fireplaces are to be found in Palace del Te near Mantua.

A moderately large and dark fireplace, whose cornice is borne by white marble consoles with projecting little figures, above it being a high addition with volutes with a white marble medallion in relief at the centre, flanked by two small marble figures, over the medallion being a great eagle between cornucopias, garlands of fruits and scrolled bands, a crow-angel figure growing out of the apex, that holds a coronet above the whole, which extends to the impost of the mirror vault 16.4 ft. from the floor, is preserved in the great hall

of Palace Doria at Genoa, but which is still far surpassed by the marble fireplaces in Palace Doge at Venice. At the greatest of these in the anticollagio, a work of Tiziano Aspetti after the design of Scamozzi, only the lower part to the cornice is of marble, the upper portion being of white stucco with gilding. Consoles supported by candelabras or by bent standing atlantes there support the cornice of the fireplace with its high overmantle (Fig. 499).

A magnificent ornamental work with great statues as decorations is the fireplace in the state hall of Palace Magnani-Salem at Bologna (built in 1576-1578 by Tibaldi), which further still retains good frescos by the Carracci. Scarcely any Renaissance palace cannot show such precious snowpieces!

331. Privies, Baths and other subordinate Rooms.

Privies were constructed in houses in antiquity. They disappeared and came again, becoming necessary, where cleanliness in the cities was subjected to legal regulations.

According to a small miniature of the Decameron from the 15th century (Fig. 500), privies at the time of the early Renaissance in country houses were constructed at least in the form of a covered shed of boards with an open space beneath it. At the time of the plague (1533) police regulations were made, according to which the owners of houses in which existed no privies, had forthwith to construct them -- a proof that in the 16th century house privies were not common in all localities.

The palaces of the early Renaissance exhibit such of mean appearance (Palaces Strozzi and Giugni at Florence, Palace Piccolomini in Pienza), but always properly placed against an external wall with windows. They must scarcely have been used by the masters, for in Italy as in France portable privies (commodes) were used, as frequently today in southern Italy and Sicily. In the inventory of Mansion de Quatremares (1384) is included one of these, and under the name of "ward-robe" such privies occur in 1540. In the 17th century they remain in use under the same name, and in the first third of the 18th century are constructed in France and later indeed also in Italy the "English places" give place to fixed water closets, that are then made large and spacious, located in the vicinity of the bathroom. 198

Note 198. See Blondel, J. F. and M. Potte. *Cours d'Architecture*. Vol. 5. Pl. 60. Paris. 1777.

The dancer Mademoiselle Deschamps had such a closet arranged, entirely decorated by mirrors, and (1760) it was particularly emphasized in renting a dwelling in Paris, that also a sitting place also existed -- a wardrobe or "English place." This "modern" arrangement, but soon 200 years old, according to its name made its way from the high North to the South.

In the great work in 4 volumes mentioned below ¹⁹⁹ is an arrangement "for a water closet or convenient place," whose seat is drawn in a recess, that gives the construction of the English water closet with entire clearness, and that substantially coincides with what we are accustomed to designate as an invention of our own days (Fig. 501).

Note 199. *L'Architecture Francoise*, or a collection of plans, elevations, sections and outlines of churches, palaces, mansions and houses, etc. --- in France. Paris. 1727. Vol. 3.

L. Gruner ²⁰⁰ gives the artistic treatment of a house bathroom in a colored representation under the title of "Bath of Cardinal Bibiena in the Vatican," a view from which we see, that also here the art of the Renaissance fully appears. Over a square room of moderate height with niches rises a cross vault, that like the walls is decorated by brightly painted grotesques of extraordinary beauty. The semicircular recesses are painted like tapestries, and one of them receives the ornamented marble bath tub. A splendidly colored and still comfortable room! The sketch designs for the decoration were furnished by none other than Raphael himself.

Note 200. Gruner. *Specimens of Ornamental Art*. London. 1850.

By Vasari ²⁰¹ was further mentioned the stufa (heated room) in Villa Lante at Rome, that Giulio Romano adorned with pictures -- the loves of the gods; then the bathroom, covered by a dome, constructed by G. Alessi in Villa Grimaldi at Brissago near Genoa. In the work of P. P. Rubens on the Genoese palaces is given a design for a house bathroom, that consists of a great room, an anteroom, a vaulted octagonal warm bath and also a vaulted cold bath. The walls of both are adorned by niches, and indeed must be assumed as richly decorated and lined with marble. (Figs. 502, 503; plans of bathrooms and kitchens, wherein is also represented the equipment of the

kitchen of a palace with oven, preparing room with dining room for servants, all arranged in the basement story.) The beautiful bathroom with the small dome resting on columns in Palace Pitte at Florence is of later date.

Note 201. Vasari. X and XIII. A perspective view (photoprint) in J. C. Raschdorff's *Palast Architektur Toscana*. Berlin 1888.

SECTION XIX. EQUIPMENT OF STATE AND LIVING ROOMS WITH PRODUCTS OF THE MINOR ARTS.

Furniture, Ornamental Vessels of Gold, Silver, Bronze and Clay, Statuettes of Marble and Stucco, Showpieces of Ivory, Precious Stones and Enamel, Mirrors, Art Glass, Panel paintings, Tapestries, Embroideries, etc.

332. Decorative Equipment.

Reference was made in Section XVIII to the technical and ornamental treatment of the living and state rooms, the construction and artistic execution of floors, walls and ceilings, doors and windows. But these remain blank rooms, if at least there be not described the means, whereby they were animated. The control of the master of the house and of the mistress will only be understood from the articles for use and art, if from the additions created by these and not the architect alone; they first impress character on the home, either that of the possessor or of the cultured father of the family with intelligence in art.

We must venture on the unlimited domain of Italian art works, if we would create for ourselves an idea of what is offered. The material is so extremely rich, that even to illustrate it but approximately would carry too far here; it must remain a matter by itself. But we must allow some light to fall on it.

333. Furniture.

Like the monumental art, also the minor arts of the Renaissance already appeared in the 12th century and demanded admission. This was perhaps at one bound. Furniture, gold, silver and bronze works were made after antique models, and produced were the artists who made it, to approximate so nearly. Large and small figures were made of marble and of metal (the so-called salon sculpture), vases of artistic shape from burned and glazed clay; chests, tables, benches and chairs, beds and seats of carved wood, elevated higher by colors, gilding and intarsias (inlaid woods).

334. Surface Ornamentation and Relief.

And the highest of their time busied themselves with designs and works of this kind. Beside the joiner stood the carver and the painter as helpers, so that one did not dominate the entire domain of his works.

573 A chief object of portable equipment was the chest until in the 15 th century, whose panels were painted with Biblical and historical pictures, whose framework was carved and gilded, a brightly colored snowpiece, placed in the room for the enjoyment of color. (See examples in Museum dell'castello at Milan, Bargello at Florence and other places). In the 14 th century intarsias, i.e., the inlaid work, supplanted painting, at first only with the effect of geometrical decorative forms in dark and light woods, here and there with the aid of ivory; at the beginning of the 15 th century were added to the geometrical ornaments also freely treated plant scrolls, palm friezes and the like, together with representations of architectural interiors, historical occurrences and landscapes, for which artificially stained woods were employed, or metal inlays were added. The flat ornamentation was succeeded by that in relief, carving as the highest expression of the mode of decoration. Moderate in extent on articles for use, overrich on show pieces (Figs. 504, 505).

574 335. Chests and Caskets, Wardrobes and Chairs.

Skilful subdivision of the surfaces and beautiful surface ornamentation are the ground ideas, on which is based the construction of the furniture of this time, that unfortunately was abandoned too soon, to give place to the meanwhile introduced overrich and strongly developed relief, against which men were bruised and caught, and that finally reached its unsound climax on wardrobes with the addition of columns, antique entablatures, niches, arcades and balustrades. -- Even benches and chairs must follow this bad art.

336. Upholstered Furniture.

The still movable cushions and pillars for antique and early Renaissance furniture became fixed parts of the furniture on benches and chairs in the later time for reasons of convenience, and thus appear as the beginnings of upholstered furniture. The upholstered chair exhibited until in the 17 th century a simple, but somewhat stiff form with vertical and gracefully turned legs, or rather curved back and a velvet covering fastened by gilt pins, with gold embroidery and tassels as special characteristics. It was followed by the Barocco chair overloaded by carving and this again by that with complete cloth covering on a simple wooden frame.

Furniture of the noble metals, entirely covered by repoussée silver, where particularly tables and mirrors come into consideration, was the fashion in Venice at the end of the 16th century, with which was connected in France the furniture of metal and tortoise-shell, the so-called Boule furniture. Fig. 507 gives an example of a chair entirely of carved wood, and Fig. 508 is one of a mirror frame made of the same material, a Florentine work of the 16th century. The age of Louis XV made furniture entirely independent of the principles of architecture.

Besides the natural color of the wood, certain parts were further enriched by gilding, which was then followed by the complete gilding of the woodwork. Also the covering of the woodwork by white, greenish or yellowish varnish colors also proceeded, with the addition of gilding. For covering the chairs were employed the most costly kinds of silk and velvet, as well as fabrics woven in different colors and covered by figure designs or naturalistic festoons of flowers.

337. Table tops with inlaid woods and semi-precious stones.

An especially artistic treatment was enjoyed by table tops, which assumed the most varied forms. They were made of simple smooth woods, then ornamented by wood intarsias, of precious sorts of marble, of ebony with ivory inlays, decorated by hard stones (Florentine stones), or by fine mosaics, veneered with costly kinds of stone, and in the early time these table tops in Florence and Venice were not supported by "legs", but by heavy and richly carved wooden blocks, which were later followed by more elegant and often capricious forms as supports. Beautiful examples in perfected execution are to be found in the halls of Palace Pitti in Florence.

Fig 509 exhibits portions of a more architecturally treated paneling of the wall with hermes consoles and niches with figures, in which the good old ground idea of the treatment of surfaces is completely abandoned; for also this, as in furniture, must follow the change in the execution of the details.

338. The Bed.

The same appearance as for chests and chairs also shows itself for beds. The old wooden canopied bed supported by columns gave place to that entirely covered with cloth, for which

kind one dating from the 17th century in Palace Mansi in Luc-ca is still exhibited.

The technics and history of chests, wardrobes and chairs is treated by G. Semper in his *Stil* (edition of 1863, Vol. 2.; cabinet-making, p. 254 et seq., and p. 338, furniture of the Renaissance on p. 325) on the basis of a representation of an Italian wardrobe, from which the system of construction is to be seen. In Fig. 506 is represented a similar piece from Gubbio, constructed and ornamented on the same ground principles. Semper there emphasizes the great fame enjoyed by the Italian cabinet-makers till the beginning of the 17th century, and he also gives the illustration of an armchair on p. 342 from the Barocco time, and half upholstered furniture from the workshop of Rubens.

339. Chests.

Brockhardt-Lübke state in the *Geschichte der Renaissance in Italien* (edition of 1878, Art. 157), that the chests of the best period, only a "few still remain, yet sufficient to give an idea of the noble and rich forms thereof." But if one wanders through the modern museums of our great art cities in E Europe, then must one indeed have a different opinion of the number of pieces offered, when certainly the genuineness of all must be subject to some doubt. Those mentioned gave these in different places, and in Fig. 197 a chest from Siena, and in Fig. 198 a partly restored one from the Berlin Gewerbe Museum.

340. Bedsteads.

From the same best period "is scarcely preserved a single bedstead," and also the most exact representation of one by Milanesi (III, 245) dates from the time of the beginning Barocco (1574), and is represented as a canopied bed with a cloth covering supported by four columns. As a prominent state object in the room, the bedstead stands free on three sides. Falke in his *"Kunst im Hause"* (Vienna, 1873, pa 119), esteems the bed, particularly the canopied bed, as an "art work." He recognizes on it the rest, formed as animals or spherical, then the top and sides, which were covered by carvings, further the accenting of the corners by posts, caryatids, fluted and twisted columns, that were intended to support the canopy, which was of velvet, silk ornamented by fringes and Spanish

gold lace. To Italian models are also to be referred the French and German state beds; with the aid of Italian workmen originated also the arrangements of Fugger in Augsburg.

More abundant in his statements is Henry Havard in Vol. III of his "dictionnaire de l'Ameublement." (Paris. N.D.). He shows on p. 400 the canopy bed of Catherine de Medici from the Chateau of Chaumont, entirely covered with tapestry and with a high carved rear side, and from the 16th century the "Bed with Columns." of Pierre de Gondi, now exhibited in Museum Cluny at Paris, and reproduced from Havard's drawing in Fig. 510. A so-called "bed with curtains" from the same time is given in Fig. 511.

In Pescocostanzo (in the Abruzzi) in House Riccardelli is found a canopied bed with twisted columns (represented in Italia Artistica, No. 64, together with other Barocco furniture worthy of consideration from House Coleconi).

For lack of remaining examples, reference must be made to illustrations for completing the material. In S. Annunziata at Florence the bed at the Birth of Maria appears as the simplest couch; others show beds with raised heads, again others having a high wooden rear wall with volute-like terminations. (Palace Vescovile in Verona). A splendidly furnished canopied bed is represented in relief on a panel of the middle bronze doors of the Cathedral in Pisa, from the time of Giovanni da Bologna. (See the illustration in the Section on Church Buildings -- Bronze Doors). On the whole the canopied beds entirely covered by hangings owe their origin in idea, but not in form, to the Gothic middle ages.

341. Majolicas.

Of high artistic individuality, both as objects of luxury as well as of utility, are the majolica vases, which were made in great numbers and are to be found in all museums of the known world -- the variously colored and glazed pottery of the 16th century, that were chiefly made at Castle Durante in the Duchy of Urbino. They represent a special Italian school of pottery, and form the transition from relief to painted decoration. The colors thereon employed are those of the Robbias; yellow, green, blue and violet on a light or white ground, where grotesque ornament continues more artistically valuable than figures and the representation of landscapes.

In Figs. 512 and 513 are given three such pieces from Museum Bargello in Florence, which are to be designated equally as beautiful and characteristic.

342. Plates, Dishes and Table Pottery.

But this process did not supply merely mugs, pots and bowls; likewise plates and dishes and all possible useful articles were produced by it for the table and kitchen. A beautiful collection of such objects is to be found in Loreto (examples in Figs. 514 to 517 inclusive) in Palace della Santa Casa, in the Museum at Pesaro, and in nearly all collections in the civilized world. Important new imitations are those of Gontagalli and Ginori in Florence.

The simply magnificent table pottery of Cardinal Alessandro Farnese, which the Museum Nazionale in Naples preserves-- blue with painted gold ornaments -- should not be omitted here. Burckhardt's judgment of this may be recalled:-- "But these majolicas are no manufacture but hand work, from a time of the most extended appreciation of forms; in each dish lives a spark of personal labor and endeavor." Herein lies the mystery, why these articles have remained so lovely and precious.

Serlio (Book I) in his book on Architecture devotes several pages to the beautiful outlines of vases, and explains their derivation -- an indication of the weight laid upon these objects by the contemporary architects.

He places before himself the problem of correctly drawing a slender and a swelled vase. In the two first the solutions, that are reproduced in Fig. 389, Sect. XIV, he takes for each kind of vase two circles, and divides the quadrants into four equal parts. From the points of division on the perimeter of the great circle, he draws radii and connects these points by horizontal lines. From the intersections of the radii of the inner circle, he drops perpendiculars to the horizontals mentioned; the intersections of these with the verticals then give points of the curve of the vase, then being joined together by a full line, the vase curve itself (Fig. 389).

343. Art Glass, Mirrors and Mirror Frames, Chandeliers.

Glass in the forms of mirrors, frames, chandeliers, drinking vessels for daily use and as show pieces, artistic plates, pitchers, pouring vessels and the like are chiefly products of the highly developed Venetian art industry. (See the Murano

chandeliers from Palace Vendramin in Venice, as well as glass objects in the Bargello, and such in nearly all museums in the world). These may serve to recall those art products known to all, which are so finely designed, so appropriately made formerly, sometimes of white and sometimes of colored glass, or of both kinds combined, and that are still made to this hour with varying taste. (Figs. 518 to 521). Colored glazing of windows in secular buildings is to be mentioned in library Laurenziana at Florence.

Also here again the Medici appear as purchasers or owners. A mirror of Maria de Medici, now in the gallery of Apollo in the Louvre, illustrated by Havard in a colored print, exhibits an enclosure of the beveled glass in the form of a shrine, which is made of gold, enamel, semi-precious stones, cameos, etc. Venetian mirrors; hand, portable and suspended mirrors in frames of wood and ivory, of wrought silver or of crystal glass -- thus glass set in glass -- are wonderful objects of the minor arts. Then what abundance and variety in the form of standing glasses and flasks (Fig. 521). How poor, beggarly poor have we become in contrast!

582 344. Articles of Luxury.

Articles of luxury, vessels and ornamental objects of the 16th century almost all bear the signature of Benvenuto Cellini (1500-1572). Magnificent pieces of these are found in the treasury of Palace Pitti in Florence, the best in the Cabinet of Gems of the Uffizi there, very many in the collections of all larger cities of Italy, and now much is still in the private possession of Italian collectors and great men!

The motive as a rule was a precious mineral (agate, jasper, lapis lazuli and the like), which existed in some fanciful form, was transformed into a vessel, and for that purpose was furnished with a foot, handle and cover. In the gold settings plain surfaces and skilfully wrought surfaces alternate with enameled and are beset with precious stones or panels. (See the small vessels from the K. K. Museum in Vienna and the beautiful flasks of lapis lazuli in the Cabinet of Gems at Florence, illustrated with the church equipment of the Section on Church Buildings).

Masks, nymphs, dragons, heads of animals, dolphins and serpents are most nappily drawn into the circle of ornamentation,

wherein with a fine sense in the combination of colors, the right arrangement is always found.

Works entirely made of the noble metals, frequently set in enamels and precious stones, in the form of cups and beakers, plates of wrought silver and gilded, not all of which are proved to be Italian work, are also found in Florence in the places mentioned. Some of the pieces show Augsburg and Nuremberg marks. On account of the connection, compare also the magnificent publication of the "Imperial Chapel" in Munich by F. X. Zettler. Munich. 1870.

524 A special branch of these art objects is formed by the pieces cut from rock crystal with polished ornament.

The so-called "Farnese casket" of Joannes di Bernardi in Naples exhibits the most splendid polished crystal, whose effect is somewhat injured by the overrich metal framework. (Fig. 523).

345. Works in Ivory, etc.

Another branch is again composed of the works in ivory, sometimes as handles of implements for eating, sometimes as beakers and tankards, whose external surfaces are animated by skilfully wrought figure compositions.

Silver implements for eating from the 15th century occur in the Fabbrica del Duomo at Siena, whose treatment is based on a sound basis like that of the ivories, which early went out of use, and are so-called dirt-catchers by their strong relief; they further are inconvenient in the hand. The former exhibit smooth handles with surface decoration in niello in simple designs on dark blue steel ground; only the end of the handle has a knob in relief, which is gilded like the end of the blade (Fig. 523). Here regard is paid to use, and every unsuitable ornamental form is avoided -- an example for imitation now, even by later peoples.

346. Tapestries, Embroideries, etc.

Costly hangings and embroideries, statuettes, busts of marble and of metal, as well as artistically wrought gems, family paintings and pictures in costly and richly carved, colored and gilded frames (Palaces Pitti and Uffizi in Florence) composed the ornaments of the rooms, and enhanced by their splendor the artistic harmony in these living rooms, in which also the articles inherited from ancestors retained their ri-

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rights, according to the principle, that good works from all periods always harmonize with other good things, also even without the prized unity of style, that under some circumstances may become monotonous. Of gilded and perforated picture frames may be mentioned as an example from the time before 1600 one such from Museum Mosca in Pesaro, which Fig. 524 reproduces from No. 42 of Italia Artistica.

Whatever is preserved in the Italian museums exhibits over-rich productions of the art industries of that time. But these must indeed be but the last part of what was made, if one takes into consideration the contents of foreign museums, and particularly if there be added what is still preserved by the wealthy and the great. Provincial exhibitions at times, to which private persons and societies contribute, afford matter for thought, of which I recall only that held in Siena in 1904. I do not include what the Church still conceals of treasures of art industries. I will only recall Monza, a place for many. The Sienese exhibition mentioned presented many mass tapestries, works of the very highest rank, which require costly materials, taste and skill in execution; also in more modest materials appear the charming laces of linen threads. (Figs. 526, 527). For example, just what the exhibition in Siena showed was simply grand. A minor and a greater art with such possibilities in general existed almost entirely there. And today with us? But there was a time, that of Dürer and Holbein, when German art industries stood at the same height, which will never be forgotten!

"The applied art rejoices

The new era by simplicity;

Yet who, an oat-bin, press,

A chest, a garden-bench

Et cetera will design

In lattice or square style--

Be the object ever so small--

Must at least be a professor."

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B. PUBLIC BUILDINGS.

Section XX. Palaces (of ruling families), Theatres, Universities, Museums and Libraries, Administration Buildings, Banks, Commercial Buildings and Warehouses, City Halls, Hospitals and Asylums for Poor, Prisons, Granaries, Exchanges, Market Halls, Merchants' Houses, Banks and Loggias, State Workshops, Docks, Magazines, Arsenals, Hotels and Baths, Public Fountains, monuments, City Gates and Bridges, Cemeteries.

a. Palaces.

347. Palaces of Princes.

Leon Battista Alberti commences his Book V (Chap. 1) on Architecture with the title of "On the Castles and Residences, that have to serve for the King and for the Lords of different ranks," and thus here also will be made a beginning with the palaces of the king. Alberti is of opinion, that a ruler has to protect his city, not only against external enemies, but also from unquiet elements within it, and accordingly fortify and arrange his residence. A hereditary monarch can place this in the midst of the city and give it the form of a palace; a new one would do better to arrange it as a fortress; yet the building does not need to appear like a prison.

The Dukes of Milan surrounded their Castle by a wall and a moat, enclosing it by walls and towers; the Visconti in Pavia protected their own by four massive angle towers; the Dukes of Este separated their Castle from the streets in Ferrara by broad moats; others, like the Duke of Urbino utilized the location of the site to his advantage, which was naturally accessible with difficulty, and only in the latest time of the Renaissance were omitted from the designs of the seats of princes all measures for protection.

348. Palace Ducal in Urbino.

It was a Count of Montrefelto, who in 1213 was invested with Urbino by Emperor Frederick II, and who built his residence as monarch there, not without the opposition of the citizens of Urbino, on a high hill dominating the city and the country, at first indeed with small area and irregular in the style of the castles of that time. With Frederick of Urbino, who succeeded to the government in 1437, arose the splendor of the house, and the highly cultured and energetic prince, who is designated as a particular friend to architecture, was no lon-

589 longer satisfied with the home of his fathers, and sought an architect, who could embody his views in his sense, and that he believed he had also found in the person of Luciano from Laurana in Dalmatia. What was erected, occurred with the utilization of the old structure, and therefore does not appear as a united whole. To be able to give the building, Palace Ducal in Urbino, a greater extent, the site must first be artificially created by filling and massive substructures, so that its masses might find the necessary support. The irregularity of the site and the mode of enlargement mentioned made possible the great cellars and storerooms, the placing of kitchens, bathrooms, etc., directly beneath the ground story, for the rooms of which the same level of the floors was required in accordance with the custom of the time. The ground story received the administration rooms and also the great library of the Duke, while the upper or noble story contained the special living apartments of the ruler. They were grouped around a square court; a straight main stairway connected the two stories, and also some service stairs besides (partly winding stairs) made possible communications within the residence. 590 The mediaeval winding stairs, according to the innovations of the Renaissance, must here yield to the straight stairs with landings. (Fig. 528; ground plan).

In the upper story was developed the highest splendor of decoration and of the degree of comfort, that was required in that time. With this the exterior remained simple; it appeared as ordinary brickwork with reddish-brown bricks, built solidly and well, with vaulted rooms and passages. A battlement cornice formerly crowned the building, as on Villa Sareggi near Florence, on Palace Venezia in Rome, and on various Bolognese palasters. Pilasters, columns, belts and cornices were made of travertine, and also the surfaces of the facades were to be faced with travertine slabs, which also occurred in part. (Fig. 246).

Architecturally most important is the court with its beautiful porticos in the ground story and the enclosed corridors in the story above, where simple rectangular windows with caps and intermediate pilasters animate the wall surfaces (Fig. 529; section). Dignified in proportions and most beautifully detailed, the court remains a pearl of the Renaissance in Italy,

which master Luciano perhaps designed and executed himself, also possibly only his successor, Baccio Pintelli. (Vasari ascribes the structure to Francesco di Giorgio da Siena; also see what is said on p. 305).

In the interior is the surprising, colossal and simply treated hall 112 ft. long, 48 ft. wide and 45 ft. high, as well as the monumental bay window in the court already mentioned.

One of the small facades is flanked by two slender round towers with pointed conical roofs; a loggia between them extends through three stories, and creates a secure standing place and outlook for the occupants of the palace over the rich landscape, and at the same time is an effective motive in the new architecture. The windows at the right and left are rectangular, enclosed by pilasters and entablatures like the antique (architrave, frieze and cornice). The classical element consciously appears here and beautifully in the details. (Figs. 245, 246). This occurs in a greater degree on the massive facades, which are toward the interior of the city, and indeed on those remaining unfinished, which adjoin it at a right angle, where lies the main entrance to the palace. Yet the attempt is also made to cover the surfaces of the walls with stone slabs, and to construct the windows in the forms of the new style, showing in the opening the antique rectangular shape. The details are designed and executed in perfect forms. Fig. 246 gives a view of the corresponding facade as found at the place (see also Arnold's work), penetrated with the antique fragrance, while the elongated street facade has not entirely freed itself from Florentine elements. There the Strozzi window again greets us, even coquetting with Gothic additions (Fig. 246).

349. Palace in Gubbio.

Worthily beside it stands the second Palace of Federigo in Gubbio, whose court is scarcely inferior to that in Urbino, (see the capitals of its columns, window details, its plan and section in Figs. 530 and 531, and its description and measured drawings in Laspeyres. *Zeitschrift für Bauwesen*. Berlin. 1831).

350. Palace near Caprarola.

A third palace on a mountain height with the use of the new arrangements for fortifications is Palace Sarnese built by

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Jacopo Barozzi da Vignola (1547-1559) on a slope of Monte Cimino in the immediate vicinity of the small mountain city of Caprarola, about two hours' drive from Viterbo. Its internal rooms were splendidly adorned by Taddeo and Federico Zuccari, and of this the artists themselves say-- "Nowhere in Italy has any prince apartments better adorned by paintings with more beauty than these."--"They say it themselves and it must be true;" but all do not believe it, and find in the Vatican Loggias the still purer charm of a chaste art. The chief parts are the quarters of the prelates, richly adorned by "stuccos and paintings," the principal story and the royal stairway.

On a plateau, that has a form similar to that of Tyrins, rises the pentagonal palace, surrounded by water moats and connected by three bridges with the surrounding gardens. Stepped structures at the front end of the site lead up to it. Between clumps of trees extends a broad avenue from the palace and the garden to a casino, before and behind which are arranged in a clumsy way ornamental gardens with fountains and cascades. The system of Roman villas for arranging the gardens and buildings about a great longitudinal axis reappears here (Fig. 532).

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Characteristic and beautiful remains the circular court enclosed by a colonnade and with six separate large winding stairways and the main stairway, the royal stairs for which the Bramante stairway in the belvedere of the Vatican served as a model, that also reappears in Palaces Barberini and Borghese. The flights of steps do not lack a certain grandeur; the facades also have a grand, though somewhat dry effect, but have good details. More interesting than the exterior is the execution of the architecture of the court; below are rusticated piers, above being coupled piers with projecting Ionic half columns, and over these being a continuous terrace with balustrade with the recessed story. The effect of the court architecture thereby becomes admirable. (Fig. 484 in Section XVII; Courts). 203

Also see Mocchi, E. *Il Palazzo di Caprarola*. Berlin. (N.D.) and Percier and Fontaine, where the beautifully simple casino is also represented.

A general view of the external appearance of the majestic palace is given by Fig. 533. As technically worded knowing, it.

may be stated, that all architectural members, such as belts, window enclosures, parapets, the main portal, the stairs, etc., are constructed of gray tufa, only the upper main cornice being composed of yellow limestone. The steps are likewise of tufa, but have risers of light limestone. Their treads are mostly constructed of red bricks laid in herring bone fashion. The floors of the halls are covered by variegated clay tiles, whose design has often become effaced by use. The external wall surfaces of the stories are plastered and alternately colored yellow and red, the retaining walls of the bastions are built of bricks and were coated with stucco. Likewise the wall surfaces of the small casino were plastered, while the window enclosures, cornice, columns and arches are made of tufa.

Of good effect are the little indications of life in these rooms: the few bright flowers, the fruits shown, and the modern furniture for use. There are people in the house! The upper story is rented to an American lady, who enjoys the fresh summer here; the building itself is retained by the Farnese family, whose office gives gratis a permit for visiting it and going through the magnificent and well preserved gardens and parks. (Via Arenula, Rome). Box hedges, cypresses, maple, sycamore and chestnut trees, holly with red berries, wild grapevines, the variety of flowers, fruit trees, fruit trees and shrubs, flowing water, the noble outlook over the country and Soracte in a grand way composes a beautiful and completed view, such as not easily found again on God's broad earth.

The pentagonal plan of the bastions is also found again in the Castle of S. Angeli in Rome, indeed under somewhat changed conditions. The nucleus structure is here a mountain palace of the highest ecclesiastical prince of Christendom, and there is a tomb of a pagan emperor, both arranged to be occupied, and furnished with modern fortifications, with bastions and moat.

351. Palace in Carpi.

Another "prince's residence of the Renaissance," the Palace of Prince Alberto Pio in Carpi, like that in Urbino is no unified creation. A square court is surrounded by columnar porticos, and is enclosed by deeper rooms, only exhibiting vault-

vaulted nalls in the ground story, forming the centre of the plan. The two stories above this are subdivided by pilasters, animated by rectangular windows, and together present an effective architectural appearance. The external upper story with its small pilasters, between which small semicircular niches alternate with windows, is terminated by a high cornice, giving a rich crown to the street facade. 204

Note 204. An exhaustive publication of this building, especially on the historical side, is given in Semper, H., F.O. Schultze and W. Barth. *Carpi*, a prince's seat of the Renaissance. Dresden. 1882.

352. Some other Palaces.

Palace Reale in Milan was built in 1772 in place of Palace di Corte, the Palace of the Visconti and the Sforza. Further details relating to this building have already been mentioned. Plans and historical statements are to be found in the work mentioned below. 205

Note 205. Cassino, F. *Le Fabbriche piu cospicue di Milano*. Milan. 1840-1844.

577 Palace Reale in Naples likewise was previously mentioned. Begun in 1600 by Domenico Fontana, it was again restored in the years 1837-1841 after a fire. The facade is 554 ft. long and on the three stories is animated by three orders, Doric, Ionic and Composite. The great state stairway was built in 1651; still notable is the addition of a small theatre, a characteristic of the palaces of the late Barocco and Rococo.

Palace Capo di Monte was begun under Charles III, but only was completed in 1839, and therefore can scarcely come into consideration.

353. Palaces in Turin.

In Turin is to be mentioned Palace Madama erected by William of Montserrat in the 13 th century, which in the 15 th century was restored under Ludovico d'Acaja; in 1718 it received after Juvara's plans the magnificent double stairway and the facade of marble columns on the west side.

Palace Reale in Turin was begun in 1646, was constructed as a simple brick structure, and contains the royal apartments with the royal armory (Figs. 535, 536; throne hall and stair hall). The furniture is of extraordinary magnificence and beauty.

By Guarini was built there in 1680 Palace Garignano with its remarkable brick facade, whose rear facade was executed only in 1871 by the architects Bollati and Ferri, but in a new manner opposed to that of Guarini. (See C. Isaia, Torino, Guida del Viaggiatore). Interesting is the oval vestibule with the double stairs extending around this.

In the plan the front line of Guarini's street facade consists of projecting and recessed straight parts, which again are connected by curved ones, thus producing an animated treatment even in the elevation of the facade. (See Fig. 265, a plan according to the book of Guarini in the year 1686). One may express just objections to the strongly animated masses of the building, but life pulsates in it, and therefore it must not be wholly scorned. The master produced a school in his art style, and he at least understood how to win high patrons and great commissions. We may comfort ourselves with a saying of Neber's (Democritos):-- "Every age of man has its particular follies." If these were follies, they still had methods, and the facade will ever remain a piece of ostentation of the late Barocco (Fig. 266), and will stand higher in art value than the starved Barocco again adopted by us at the same time. (Also see p. 334 of the text).

354. Palace del Valentino.

In the so-called Palace del Valentino, erected about the middle of the 17th century at the command of Maria Christina of France, widow of Duke Vittorio Amadeo I in the style of the contemporary French chateaus, appears to us one of the best architectural creations of Turin. The building exhibits on the city side the beautiful court of honor (Fig. 537) with a more united facade toward the river (Po), (Fig. 538), both having steep French roofs and distinguished by four angle pavilions with hip roofs extending upward like towers. The original grand design of a pupil of Salomon DeBrosse remains unfinished; in the last decades the principal facade next the Po received some additions. Magnificent halls still exist in the second story. The Palace served for holding court and for family festivals of the House of Savoy, but since 1860 a technical school has occupied it.

355. Palace of Stupinigi near Turin.

Six and one-fourth miles from Turin lies the Palace of Stu-

Stupinigi, built by King Charles Emanuel III after the plans of Juvara, but changed externally by Count Alfieri, whose middle building is crowned by a mansard domed roof, on the top of which stands a stag in cast bronze (Fig. 539). The interior has magnificent halls adorned by frescos and pictures by Vanloo, Valreseni, Wenrlin, Cignaroli, etc. Juvara also furnished the plans for the plundered and unfinished Palace at Rivoli near Turin (1712).

Specifically Italian types in the spirit of the palaces of upper and middle Italy of the early and late Renaissance time are scarcely to be designated in Piedmont, but on the contrary those of the high Barocco and those built under French influence flourished more. France again returns something of what it had received from Italy, and gladly adds native elements thereto, as on the Palace del Valentino mentioned.

Also the Palace in Stupinigi is not free from them. Allied relations of the courts brought Italian artists to France and French to Italy, but the latter were in very limited number, or accompanied those from the Netherlands. On the other hand and perhaps in too great numbers, they found acceptance in Germany, where soon no court or little court was judged to be complete in its organization if without a French architect.

In Emilia the Farnese first commenced with the extensive group of buildings of Palace Pilota in Parma, but without bringing it to completion. The great court exhibits the form of the expressed lean Barocco in its entirely honest "simplicity." Its theatre built by Aleotti (1618-1628), pupil of Palladio, and its great hall della galleria, its hall di Lettura, and its corridor della Biblioteca (see Italia Illustrata, No. 19) brought well deserved fame ²⁰⁶ by their rich contents.

Note 206. See the system of the facade of the court of Palazzo della Pilota (Fig. 293), then the illustrations of the theatre and of the library in Parma in this volume.

356. Palace in Modena.

In Modena under Francis I (1634) Palace Ducal was erected by the Roman Avonzini, which exhibits one of the mightiest if ⁶⁰² facades of this style epoch (Fig. 540). Of imposing effect is the arcade court with two stories lying above each other and a crowning terrace.

357. Castle in Ferrara.

357. Castle in Ferrara.

Of the Palace of the Este in Ferrara may justly be said:--
 "Their castle is unequalled as a picturesque and imposing view,
 but cannot pass for a palace,"-- and just on that account is
 indeed one of the most interesting castle structures in all
 Italy. The castle is built as a so-called "water castle" of
 red bricks, to which lead drawbridges and arched bridges through
 detached gateway structures. massive square towers with
 galleries in high and plain arched cornices, such as were in
 use in Florence and Siena, with additions like belvederes, flank
 the castle structure (Fig. 541).

One enters the interior from the street through three entrances. The main entrance leads through a three-aisled guard-room, covered by continuous tunnel vaults resting on columns; from this over a narrow drawbridge into a vaulted passage, and through it into the great plain court. The interior now no longer contains what the exterior promises; it serves for administrative purposes and has little worthy of note artistically. only the hall del consiglio contains frescos by Rosso Fossi, as well as the adjoining hall di Napoli, that represent pugilistic contests. better than these are the friezes of children in the succeeding hall dell'Aurora, a room that may be designated as the most beautiful in the building. On the exterior the continuous balconies constructed of white marble slabs, are so far noteworthy, as their supports formed of three slabs scarcely 7.9 ins. thick, placed above each other and with ends shaped like volutes, that support thin floor slabs consisting of two pieces in depth.

Likewise the covered balcony extending the entire width of the bridge head is yet to be mentioned, that rests on similarly narrow supports; its superstructure consists of wooden posts, lintels and purlins, whose intervals are closed by windows. A bulbous metal roof of shape similar to that on the bay window of Palace Roverella, covers the entire extent of the balcony.

358. Palace of the Gonzaga at Mantua.

The Palace of the Duke Gonzaga, now Corte Reale in Mantua, built for Frederic II Gonzaga in 1502, changed and painted by Giulio Romano, contains an abundance of interesting and magnificently decorated rooms, particularly the dining room, hall

609 dello Zodiaco, whose ceiling is painted with stars on a dark blue ground with the use of gold, the hall degli Specchi, some rooms with labyrinthine drawings on the ceiling in blue and gold, and also to be mentioned is the small cabinet of Isabella d'Este with its decorated blue and gold ceiling--which are to be regarded with their costly works in wood, stucco and marble as permanent models for architects, painters and sculptors. (Fig. 542; hall dei Marchesi).

Here is to be added Palace Castello del Corte, now serving as archives, with its precious mural and ceiling paintings of the great Mantegna, a small example of which shows their character and firm drawing. in Fig. 543, representing a spandrel of the vault painted in gray on gray with a medallion portrait of a Roman emperor, enclosed by a garland and bands, adjacent to which are other spandrels with mythological scenes, while at the apex of the ceiling is arranged a so-called illusion painting with girls and cupids leaning on a balustrade. A wealth of magnificence is found here, and is offered for study of the artist possessed of refined invention and with feeling for the truly beautiful; here is found the best that the spirit of man has ever created in the domain of the decoration of monumental buildings.

359. Palace Doge in Venice.

The Palace Doge in Venice on the Rivoalto island was likewise erected by the Doge Partecipazzo (809) as a castle with moat, drawbridge and three towers connected by walls, with the residence of the Doge in the eastern wing facing the narrow canal. First in 976 and again in 1105 it was greatly injured by fire, but it was enlarged in 1173, 1301, 1309 and 1340, when the towers were removed and the moat was filled. Under Doge Foscari in 1424 the palace was again enlarged, and the beautiful portal della Carta was begun (1439), a charming example of the transition from late Gothic to the Renaissance.

The architects of the South wing must have been Pietro Barabagio and Filippo Calendario; those of the western were Giovanni Buon and his sons Pantaleone and Bartolomeo.

The magnificent court was begun in 1485 A. Rizzo, was continued in the 16th century by P. Lombardo and Antonio Scarpagnino, yet was completed by them only in part. The small facade in the northeast angle adjoining the Church S. Marco is

ascribed to Guglielmo Bergomasco (1520), while the completed facade of the east wing was by Rizzo.

In the year 1577 two wings were nearly destroyed by fire, when 15 architects were asked for their opinions and agreed for a rebuilding, with the exception of the palace architect Antonio de Ponte, who promised to undertake the restoration without rebuilding the ground walls, and who accordingly executed it. A final structural restoration was made for the facades covered by red and white marble tiles, and for some piers in the court in the years 1873-1889, with considerable renewal of the ornamental decoration.

The giants' staircase, that extends open through the court, and is adorned by two colossal statues of Neptune and Mars, (both by Sansovino in 1483), was built by Antonio Rizzo from Verona as a state entrance to the second story, as well as a also the magnificent facade and the adjacent graceful projection.

The facade with the clock was executed by Bartolomeo Monopola (1589-1609). The stairway in the interior, the Scala d'Oro, with its splendid stucco tunnel vault leads to the story with the great state apartments and halls for sittings, the hall of the Senate, the hall of the Great Council, etc. (Fig. 544)²⁰⁷

Note 207. Also see the official guide through Palazzo Doge in Venice by Antonio della Rovere with the ground plan of the arrangement.

Thus here is no building from a single imagination, no unified work, gradually originated were the different parts under special conditions, and they were continued in the varying taste of the time. Careless whether the newly erected harmonized with the old, one was joined to another as necessity required, this residence of the president and of the legislative bodies of the republic of Venice, over which the storms of time swept for more than a thousand years (809-1901), yet still unshaken, a monument of architecture, whose stones tell its history, where chapter continues chapter, even if each page be written in different letters, yet does not have the expression of absurdities collected together. From small beginnings to the highest development of power and magnificence none of the actual modes of expression disturb the grand impression of imagination, and none of others, since they were

created by men of equally high development, even if at different times, and indeed reconciled the idea of beauty of one architectural style with that of another; for only unskilful works of one may not harmonize with the good works of another. Each period gives its best and lays it down with the degree of self-consciousness proper for a time of high abilities.

This seat of the ruler of a republic with its historical recollections surpasses all, that Italy has elsewhere created in all times, serving the same or an allied purposes. No powerful monarch has ever understood how to infuse into his building stones the degree of intellectual life, which the nobles of Venice understood how to give theirs in such a high degree.

360. Palace in Caserta.

On the contrary, the greatest Palace of the King of the Two Sicilies appears dry to us, though erected by an architect of spirit and taste; the Palace in Caserta near Capua. Master Luigi Vanvitelli designed the plan; on Jan. 20, 1752, was laid the corner stone, and on June 19 of the same year were the foundations commenced.

It is the "Potsdam or Versailles of Naples," and with its forecourts, ornamental garden, protected leafy alleys, wide avenues bordered by trees and grand cascades and basins beset by statues, that extend an hour's walk to a mill, it is a combination of the Roman villa and the French chateau in a widely extended level country.

In elevation, not in the plan, is recalled the mediaeval castle with four towers at the angles of the plan, while the middle is accented by a domed structure without a complete motive, and not treated with sufficient importance. The middle projection is adorned by the antique pediment, that after Palladio came into use again. (Figs. 545, 546).

The living and state apartments of the palace lie around a rectangular court, which is again subdivided into four small courts by two transverse wings crossing each other, and which are connected together by the domed structure over the crossing, and by corridors in the middle wings. The angles and the middles are emphasized by slight projections; the living rooms are all in direct connection with each other, but no longer after the old custom are accessible from the exterior by airy corridors, since to them are added small anterooms or

side rooms in the width of the old corridors. Between these are inserted frequent small winding stairs connecting the different rooms in the various stories together. Likewise poorly lighted and ventilated middle passages according to the taste of the time were not neglected. In spite of all academic regularity for these reasons, a definite clarity in plan is still missed in certain places.

Grand are the front vestibules (Fig. 547) arranged at the entrances on the main and garden fronts, from which one looks diagonally toward the small courts. Three-aisled arched corridors lead from thence to the great stairway vestibule, that from its centre permits views of the four courts, and from which one passes to the state stairway, which extends only to the principal story. The convenient stairs with landings and in three flights, so far as refers to plan, dimensions and decoration of the walls by marble, belongs with the grandest of its kind, and according to the structural material, we have before us the most costly stairway in the world.

For lesser passage, beside the great main entrances are arranged subordinate passages at the middles of the side wings, which correspond to the passages of the wings in the courts. In the direction of the principal axes result very rich views through the entire building.

On continuous axes the greatest weight is laid in the principal story, as shown by the dotted lines on the plan. All doorways lie on the same axis, so that from a point of the corner room one has a view through all rooms of the entire main and side fronts. A really grand view, with the festal use and lighting of all rooms together may have afforded a fairy-like impression, and would not lack effect even by daylight. The view in the direction of the middle axis through the vestibule and the six middle halls is likewise imposing in effect. In a dignified way and removed from the external facades, the palace chapel lies before the great vaulted vestibule of the stairway, directly accessible from the state stairway. 208

Note 208. From a photograph.

Of special interest is the addition of a great theatre, the theatre domestico di corte, whose ceiling and 40 boxes (besides the royal) were supported by 12 Corinthian columns in the

audience room. 209

Note 209. See Vanvitelli, *Dichiarazione dei disegni del Reale Palazzo di Caserta*. Naples. 1756. Also the plans taken from thence in Figs. 548, 549, as well as the sections in Figs. 571, 572.

The general view of the palace (Fig. 545) shows four higher angle projections and an octagonal dome over the crossing of the two principal axes, i.e., over the great central main vestibule, thereby producing an effective outline of the building. The upper stories of the angle projections and that of the central dome dominating the whole were indeed planned, but never executed. Unfortunately! They would have lessened the monotony of the exterior of the building. The form of the dome was well conceived, its twofold purpose was well weighed, besides dominating the masses it should serve as a great covered outlook terrace for the occupants of the palace. Likewise was afforded the possibility of controlling thence the structural condition of the palace and of its roofs, as well as making possible a free view in all directions over the rich landscape, the hills and the distant sea. Vanvitelli understood how to satisfy these requirements; he desired no church dome, but rather an outlook pavilion in form and purpose. (Fig. 546).

361. Palace Villa Reale in Milan.

A palace belonging to the end of the 18th century -- the Villa Reale, formerly Palace Belgioso -- in Milan, the work of the Vienna architect Leopoldo Pollack and his employer Lodovico Barbiano-Belgioso, of the year 1790, may still find mention here. It exhibits the classical French influence of that time and a very beautiful, academically treated plan. The architect employed the court of honor enclosed next the street, the polygonal vestibule of Caserta, and the arrangement of the middle rooms of Palace Chieracato at Vicenza (Figs. 548, 279), but in a skilful manner.

362. The Rocca near Pesaro.

Jacob Burckhardt in his *Geschichte der Italienische Renaissance* (chap. XII, edit. of 1878), treating of fortifications of mountain castles, called attention to the Rocca or Rocchetta, and stated that some princes or entire dynasties were often accustomed to dwell for a longer or shorter time in for-

fortified castles, and provided for themselves in the interior according to their rank, without sacrificing security of person or of residence. "The castles with high walls and battlements" disappeared, in place of lofty fortress towers Federico of Urbino introduced low ones, which could be injured less by artillery during a siege. The battlements of the middle ages were omitted (1412-1447), in their places appearing heavy cornices with consoles and rustication of the ashlar work of the bastions. But then it should not be forgotten, that "nearly all architects named were at the same time fortress architects, as such often recommending themselves more strongly to great men, than by their art in a narrower sense". G. Vaccaj, for example, states in "Italia Artistica," that the Rocca near Pesaro was built after the drawings of Brunelleschi. It is certain, that L. da Laurana would have preferred to complete the Rocca near Pesaro, than the Palace in Urbino. Of the Rocchetta and the Rocca of that time we have representations by the intarsias in the choir of the Church of S. Agostino in Pesaro (see Vaccaj, p. 63), and by the beautiful medal of Enzola -- the medal della Rocca -- which is represented in Fig. 550.

A heavy work remains to us in the Mantual Castle near Civita Castellana, built by Pope Alexander VI (1494-1500), afterwards enlarged by Julius II and Leo X, and whose court with piers was adorned with paintings by the Zuccheri (Fig. 551). The portal near the drawbridge bears the inscription:-- "Julius P. P. II" (who occupied the papal throne 1503-1513), and rusticated surfaces of all decorative members, that recall a similar treatment of the surfaces of the ashlars of Porta Nigra in Treves. Shields on the exterior of the wall bear the arms of Rovere. In the plan appears here indeed for the first time the pentagonal instead of the rectangular form (Fig. 552). A massive and not high tower dominates the design (see No. 25); at four angles of the walls rise acute-angled projections like bastions, while the fifth is treated as a semicircular tower. A deep moat encloses the building on two sides, which is in good condition, and last served as a prison for the feared Gasparone and his band. 210

Note 210. J. Friedländer in Jahrb. d. K. Preuss. Kunstsamm. II, 1881, p. 175, No. 7, describes the back of the medal:--

Inexpugnabile Castellum Constantium piscarense Solviti Publicae. 147. "The Castle of Pesaro, on whose battlements warriors are visible, with the sea in the background." "Below is Io. Fr. (incised)," artist's name, i.e., Johannes Franciscus Parmensis, whose family name was Enzola.

The front side already appears on another medal of Enzola of the year 1414, and has the inscription:-- "Constantius Sfortia De Aragonia fil. Alexan Sfor fil, i.e. son of Alexander Sforza, piscarens princeps Aetatis An. 27.

The diameter is 80 mm. It is represented on Pl. 21, as well as also in *Tresor de Numismatique et de Glyptique, Medailles coulees et ciselees in Italie (I)*, Paris, 1834. Pl. VII, No. 3, and in *Italia Artistica*, No. 42. Pesaro. p. 67.

On the building of a mountain castle (fortessa de la rocca) also see L. B. Alberti. Book V.

364. Castle in Civitavecchia.

In the year 1508 Bramante began another papal so-called harbor castle in Civitavecchia, that he must have built to the upper part of the middle tower, and which Michelangelo then completed. The plan reverts to the rectangle in its form, which is characterized by 4 round towers at the angles and a polygonal tower at the middle of one longer side (Fig. 553).

The editors of the "Cicerone" request, that no blame be placed on the honored Bramante therefor, since he has adhered to "a round bastion for diverging fire, instead of turning to the recently invented bastion." Albrecht Dürer also did this in his fortifications of the city of Nuremberg, without being criticised by anyone (1527), except that in Nuremberg tower bastions occur instead of round towers, which made possible a better handling of the artillery.

Sangallo yet followed in Civita Castellana only the ancient Italian and the modern Italian fortification of cities with bastions and middle works (bastions and ravelins), while Bramante adhered to the ancient castrum (camp). For the Dutch and French and all later military architecture Sangallo and A. Dürer remained the inspiring masters. The great Vauban (1633-1707) 100 years later was only the intelligent pupil of those mentioned.

365. Castles at Braccione and Rimini.

Entirely on the mediaeval basis continued the architects of

the castles of Braccione and of Rimini, which are models of strong seats of noblemen in mediaeval taste and sense. That built by master Orsini in 1460 came into the possession of Odescalchi, and was restored in 1894-1899. It contains good Renaissance furniture and a mediaeval beam ceiling. (Fig. 554).

The Rocca of Rimini was built (1417-1468) by Sigismondo Malatesta, whose arms are cut over the entrance. (Now partly destroyed and perverted from its original purpose, it serves as a prison).

616 An interesting reconstruction is given in Fig. 555 from the work of Guglielmotti, *Storia della Marina pontificia*. (Vol. X). It agrees tolerably with what the (skilful engraver of the mediaeval epoch) seal engraver Matteo Pastri has represented on the medal, the "view of the fortress of Rimini erected in the fifteenth century for Sigismondo Malatesta, the victorious lord of that city" (1446). The inscription on the medal is:-- *Castellum Sismundum Arimense 1446* (Castle of Sigismund of Rimini). A general plan of this fortress in its present condition (1820 ?) was made by the architect Stegani in Rimini, and like the medal on Pl. 53, No. 11, is represented in *Storia dell'Arte*, shown by their monuments of G. B. L. G. Serroux d'Agincourt. Prato. 1829.

366. Castle of the Visconti-Sforza in Milan.

The view (Fig. 556) from Sebastian Münster's *Cosmographia* (1550) gives one of the most extensive dynastic castles, with whose erection are connected the best names, like Filarete, Leonardo and Bramante, and the owners were also representatives of the most important rulers, the Visconti and Sforza, who had raised themselves to be dukes of Milan.

617 Of the last Visconti (1412-1447) and his Castle in Milan, Burckhardt states in his "*Kultur der Renaissance*," (p. 30), that it was surrounded by splendid gardens, shaded walks and exercise grounds, but that all means for the safety of his person were provided. His son-in-law and heir, the fortunate mercenary captain Francesco Sforza (1450-1466), entirely unequalled in bodily and mental gifts, never conquered in the field, was the man, who from a low condition raised himself to rule a realm, and became his successor. He was succeeded by Galeazzo Maria, and then as the last ruler by Lodovico il Moro (till 1499), maintaining the importance of the family in

the same sense. They were patrons of the arts and sciences and accordingly organized them in their possessions. In what manner this occurred in the most prominent secular architecture, in what way was the determination of the different parts of the castle, we are shown by the well known view by Münster, though it is not trustworthy in all its parts.

Partly destroyed and finally utilized as Austrian barracks, this monument of the fate and end of an illegitimate ruler was again skilfully rebuilt by the architect Luca Beltrami, and transferred to museum purposes -- the aim of our present restoration of monuments. Further in Part No. 25. I. Milano Italia Artistica. p. 77 et seq.

367. Castle at Vigevano.

In the vicinity of Milan should yet be mentioned the great Gothic Castle of Sforza in Vigevano, on which Bramante was also employed. (Also see:-- *Le rarità di Vigevano* of Girolamo Bissiguandi. Vigevano. 1840). The beautiful Renaissance loggia and also indeed the upper part of the tower (see illustration in Section XXI:-- Public Squares, and Fig. 557) passes for his work. Now used for military purposes, a part of the building is designated as Rocca Vecchia. According to Gaudenzio Merula, the paintings here must have been executed by Leonardo.

368. Castle of S. Angelo in Rome.

As an important but architecturally somewhat singular example still remains to be mentioned the Castle of S. Angelo. New life blooms on the ruins! From the tomb of a Roman emperor is made a modern citadel with princely arrangement of the interior, that is connected with the residence palace of a high ecclesiastical prince. The structure first became important by its siege by the constable of France, Charles de Bourbon, and his tragic end by Girolamo Cellini. Here Pope Clement VII withstood in 1527 the dangers of the siege of the castle. The character of a strong fortress with only a square enclosure (cinta) was lost in the times of Alexander VI (1492-1503) to Paul IV (1555-1559). Pope Marcellus reigned but a few months, but first had the purpose to strengthen the castle of S. Angelo and to make it a strong place, when he entrusted the corresponding work to Camillo Orsini, who improvised a bastioned front with broad moat in the form of a pen-

pentagon, enclosing thereby the square walls of Alexander VI. He followed the idea of Sangallo, who had already at Civita used it at Civita Castellana. An inundation of the Tiber (1557) destroyed the work of Orsini, which consisted of fascines, earth and unburnt bricks.

620 A rare engraving giving information concerning the plans of Orsini was made known by Lafreri. It is reproduced in the interesting little work of Borgatti Mariano, "Castel Sant'Angelo in Roma, 1890", as Fig. 32 a, Pl. 18 a, p. 132 of text. The fortifications were certainly executed, since Pius IV (1561) feared incidentally an attack by Turks. As engineer was engaged Francesco Saporalli da Cortona. The Pope of the Medici family mentioned (1559-1565) had a medal struck as a memorial of these works, which is represented in Fig. 558. It bears on the margin the word "Instaurata" (restoration). The explanation of this states:-- "In memory of the great work of the pentagonal fortification, Pius IV had a medal struck." A more correct representation than the medal is given by the bastioned general plan according to Borgatti by Fig. 560 after Fig. 41 a of the original, with the two kinds of enclosures, square and pentagonal. To the time from 1557 and 1561 dates the new and improved arrangement of the fortress.

What the different popes and their architects may have done in the course of time may be examined at the place, but may also be learned from Figs. 559 and 561. The stuccoed and painted halls and anterooms, the splendid bathroom of the Pope, the loggia, the vaulted corridors, courts and stairways indeed show, how the monarchs arranged for themselves life in the fortress.

369. Stables.

Both for the palaces as well as for castles there are not lacking the stables, either as separate buildings or in direct connection with the residences. They were not erected by the architects as simple utility structures; on them was likewise impressed the stamp of great spaciousness and of a certain luxury, and the first masters did not disdain the solution of such a dry problem, as Bramante has shown by his stable of Palace Pamfili in Rome. 212

Note 212. See Petrouilly, p. 195 of the text.

At least in middle and lower Italy, climatic conditions per-

permitted a better space development in the interior, as shown by Fig. 562, where the three-aisled plan is expressed with a broad and somewhat higher middle aisle with narrower side aisles, with the use of a high side light. The vaults here rest on reddish-gray antique granite columns with well profiled bases and capitals of the Doric order and happy proportions of the same. Between each two columns are arranged the stalls.

b. Theatre Buildings.

370. Historical and General.

The theatres of the Greeks and Romans were desolated, and disappeared under the uproar of the weapons of the northern peoples striving for new places to live, and of the people dwelling on the blessed borders of the Mediterranean, farther advanced in culture. Youthful Christendom put a complete end to them. Into contemporary forgetfulness these arrangements might well fall, but could not be removed from the succeeding and aspiring culture. The intellectual life of the peoples lent them their ancient rights, even if at first in a changed form, to later find again what the antique had attained and required. The stage of the ancients reappeared among the Christian peoples of the middle ages and of the Renaissance. The joys and sorrows of a divine or terrestrial hero, the representation of good and evil, whose reward and punishment, considerations and acts of the highest customary conceptions and laws of mankind, the worth and destiny of existence remain the bases of the representations of the theatre at all times and among all peoples, which were convinced of their culture problem, from the ancient Egyptians to our own time.

371. Church Theatres.

The clergy, who preached a miserable earthly existence and an unknown better future, at the same time was conscious of the great impression, which the dramatic art had always exerted on the masses, were the first to take possession of the stage again, but then set aside the gods, heroes, poets and philosophers of the ancient world, and set in their places the events in the origin of the new faith and its principles in the most effective way. For example, what could impress the believing Christian auditor more, than a production of the Birth of Christ in the stable of Bethlenem, with the Adoration by the three holy kings, his Entrance into Jerusalem

and the Tragedy on Golgotha? All represented in the quiet rooms of a monastery or in the mystically harmonized interior of a high vaulted aisle or choir of a church! The costly managers in the Munich National Museum indeed give an idea thereof. Here the new Christians first took the lead on English soil. The sacred dramas there date back into the 12th century (Goffredo died 1146), while the "religious spectacles" first occurred in Italy about the 13th century. (1243). 213.

Note 213. See A. d'Ancona, *Origine del Teatro Italiano*, I Libri III. Vols. 1 & 2. Second edition. Turin. 1891.

1. The Church fathers and the Latin Theatre.
2. Sacred and liturgical adoptions of the new dramas.
3. The liturgical drama.
4. Beginnings of sacred drama in France and other parts of Europe and in Italy. (p. 87).

372. Palace Theatres.

"Only late commenced the permanent theatres, and these for long did not take an external art form." Classical pieces were indeed represented in the golden age of the Renaissance in the palaces of the great. Thus for example, Lorenzo, a nephew of Leo X, had a piece of Plautus played, but for this indeed the scenic equipment may have played a slight part. But already in 1472 Cardinal Gonzaga caused a theatre to be arranged in his Palace at Mantua, and Ercole I gave theatrical representations in 1486 in his Palace at Ferrara.

373. Stages for the Mysteries.

The stages for the mysteries and their permeation by jesting was dropped in Italy as inartistic earlier than in northern countries. From the monasteries and churches they came to the marketplaces. They consisted of a wooden stage framework in three stories, the middle one for the representation of a earthly life, the upper for paradise, and the lower being assigned to hell. These were given up, when the exhibitions were transferred to enclosed rooms, and this again occurred earlier in the North than in the South. France and England contest the priority of this procedure, while for example in Spain at the time of Cervantes (1547-1616), the stage of the poet and wandering actor Lope de Rueda consisted of four benches forming a square and covered by planks. To it also belonged a wooden curtain, behind which stood the musicians to

1941. The first year of the war.

1942. The second year of the war.

1943. The third year of the war.

1944. The fourth year of the war.

1945. The fifth year of the war.

1946. The sixth year of the war.

1947. The seventh year of the war.

1948. The eighth year of the war.

1949. The ninth year of the war.

1950. The tenth year of the war.

accompany the romances without the guitar. 214

Note 214. See the interesting publication:-- Streit, A. Untersuchungen über das Theaterbauwerk bei den classischen und modernen Völkern. p. 56. Vienna. 1903.

374. Enclosed Theatres.

Public theatres, accessible to the general public were still unknown in Italy in the 15 th century. The first permanent theatre was built in Paris in 1584, followed by the Swan and the Globe Southwark Theatres in London after 1596, whose erection Shakspeare assisted by a money contribution. According to Streit, both London theatres were enclosed theatres with galleries, supported by vertical wooden posts set over each other. Behind these rose the seats in the form of an amphitheatre. The tendency of this kind of theatre is to create an interior on the least area possible, that may contain the greatest possible number of auditors. On this Streit states:-- "For a theatre the resulting greatest economy in regard to its ground area was not the aim, nor even a measure requiring this, and therefore the endeavor to arrange on the least area the greatest number of auditors in successive galleries was entirely false." I might also assent to this, but however true in itself, the Italian Renaissance has nowhere been able to convince itself thereof, as shown by the numerous and great experiments in palace and public theatres, for example in Caserta and Milan. Only the first attempts in Parma and Vicenza tend to the antique, in the later triumphs the system of successive galleries.

375. Public or Popular Theatres.

The church theatre was succeeded by the palace theatre, and to this first the public. A semicircular theatre constructed of wood was once erected by A. Palladio for a carnival representation in Venice.

623

376. Principles of Theatre Construction of the Renaissance in Italy.

On what basis rose and proceeded now the theatre construction of the modern period, and what was taken from the antique by it? The requirements remained the same:-- the orchestra on the level floor, the elevated stage, the auditorium arranged as an inclined amphitheatre, the towers and adjoining necessary rooms.

The roofed theatre of the ancients (Pompeii, Aosta) (Fig. 563 with a comparison of antique models of auditoriums) was preferred, and therewith the plays at night with corresponding lighting by lamps or candles, the orchestra after the Greek model (Fig. 553) in an elongated horseshoe or exact semicircular form, or such with adjacent wings perpendicular to this (see circus maximus, Fig. 563) were retained. The plan of the rows of seats follows the form of the orchestra, but also their segmental arrangement was not rejected, such as shown in the Greek odeions (Fig. 563). The external architecture was equally unimportant as for the Greek theatre, but for different reasons. The Roman model was only employed later.

Manfred Semper in this "Handbuch", Part II, Vol. 6, Heft 5, p. 43, states:-- "The masters of the Renaissance had before them for the form of their theatres the relatively well preserved ruins of the antique Roman theatres and took these as models, but nothing of their theatres has remained." However much more than we see still of the antique theatres, the Renaissance masters also could not have taken them for a model, and properly only the roofed theatre of the ancients would be taken into consideration. But now the treatment of the ceiling and roof of this appeared, they also had no starting points for this. What was to be given here could only be new, thought out for itself. But we would not forget here, that what we have from them was limited to the palace theatres, which do not appear as external architecture. They were hall structures exhibiting the same architectural treatment as the other apartments of the prince. Only of P. Sansovino is it stated, that he erected in Venice (1580) two beautiful permanent theatres at great expense, one round and one oval, but which were only intended for carnival comedies and held a great multitude of men. (See Burckhardt, J. Geschichte der Renaissance in Italien. Section 192. Theatre Building).

Also a permanent theatre of semicircular form for the city of Venice was built by A. Palladio, again intended for carnival comedies, and constructed of wood, with facades in antique forms. His still existing principal work, externally entirely formless, but so much the more spirited and interesting in the interior, is and remains the Theatre Olimpico in Vicenza.

377. Theatre Olimpico in Vicenza.

It exhibits in the interior the auditorium in the form of a half ellipse and rising like an amphitheatre, comparable to half a Roman amphitheatre, and like that terminating with a portico at the upper row of seats. The antique theatre and also the amphitheatre, in accordance with what has been said, were models for this portion of the modern theatre, that enclosed a free arena or orchestra, followed by the rectangular stage of small depth with a subdivided permanent architectural background, like that of the Greco-Roman theatre in Asia Minor. (Theatre in Aspendos).

A middle entrance of medium size with a smaller one on each side and others at the ends of the stage afforded views in the streets of a city, flanked by greatly varied houses; all constructed of wood and carved, diminishing in perspective and ending in a painted background, the whole presents an elegant, but a beautiful and rich representation of a permanent background. (Figs. 564, 565). The scene is a "symmetrical stately building with five portals, through which one sees the rising alleys with varied and unsymmetrical separate buildings."

If the auditorium, orchestra and scene are borrowed from the ancients, then is the idea of presenting in the scene a view of a city original and novel, and is to be regarded as an extension of what the ancients only gave in simplified form. "Nowhere is there deception in our modern sense, but a festal magnificence of view."

378. Theatre Farnese in Parma.

Giambattista Aleotti, the gifted pupil of Palladio, designed 34 years later (1618) a Theatre for Parma, that E. Bentivoglio erected. It indicates an advance and an innovation in theatre construction. The auditorium is of rectangular form, in which is inserted a semicircular portico extending through two stories and continued in straight lines next the proscenium (Fig. 566 from Streit's plan of the "Theatre Farnese at Parma"). Thereby the auditorium receives the form of an open horseshoe. The rows of seats enclose a great parquet, at one end of which opens the stage, here not as permanent architecture, but rather formed as a richly enclosed triumphal gateway or as a monumental frame adorned by figures and columns,

through which one sees the acts played on the main stage, that is extended by two rear stages -- the ground idea for most modern theatres. (Fig. 567, from a drawing of J. M. Olberich in Streit).

Indeed in veneration for his master, Aleotti gave to his arcades of his auditorium the form of the porticos of the Basilica in Vicenza; perhaps he also knew not how to offer anything original.

628 The high porticos were formerly treated in polychrome, like the main facade in white and gold, as the remains of color on the architectural parts still show. The wooden statues were painted white, the triglyphs in the friezes were likewise white, the metopes red, the columns reddish marbled; the equestrian statues in the vicinity of the proscenium were constructed of a wooden skeleton covered by stucco.

An engraving exhibited in the theatre shows us the proscenium with curtain lowered and the date of 1618. There is preserved a "fragment of the ceiling of the Farnese Theatre painted by Lionello Spadi (18th century)", consisting of thin wood with a painted boy. In the adjacent Museum are two "Murano lustres" from the end of the 17th century, of white glass with red and green flowers, that formerly decorated the said theatre.

The visible framework of the roof now yawning over the interior of the theatre was not the enclosing ceiling above, according to these finds, or not even a stretched awning -- a richly painted wooden ceiling must have formed the proper covering. The architectural elevation, the colored architecture thereof gleaming with gold, in the splendor of a rich lighting with candles, a thousand-fold reflected by the facets of the glass prisms on the lustres, the room itself filled by a distinguished society of ladies and gentlemen, shining in velvet and silk, gold and silver, must have had a dazzling effect. Once arousing the wonder of the entire distinguished world, this theatre is now in lamentable dilapidation.

This architectural work indeed deserved a better fate, and for historical and artistic reasons would certainly have been worth preserving, but also here is the lot of the beautiful on the earth! Political disturbances, changes in the position of the ruler, the ceasing of the purpose and the loss of

interest resulting therefrom, besides the lack of funds, may have been the causes of the present condition of the work.-- Not everything can be retained by those born later, it would otherwise appear strange in the world, and only the living have rights!

379. Theatre of Serlio.

Serlio (1584) makes in his Book II of his work on Architecture ²¹⁵ particular statements with drawings concerning the theatres of his time. (Of the stages and theatres as customary in our time). He first treats of their longitudinal section, when he gives the steeply rising amphitheatre (auditorium), then a parquet and before this a raised stage with inclined floor and a background (Fig. 568). He desires the stage floor to be at the height of the eye, first a part being horizontal, then gently rising as far as the rear wall, before which is placed the painted background, and he gives figured proportions for this.

Note 215. Pls. 47 - 52 of the Venetian edition.

The narrow surface C of the raised stage is designated by Serlio as "place of the scene"; the slightly raised surface F is intended for the seats of the distinguished persons. The first row of steps belongs to the great ladies, and the next to the less prominent men. Then follows a concentric walk, as in the antique theatre; then come the other rows for persons still less eminent, beyond being a second concentric walk with other seats for persons of lesser prominence, and finally the surface K for the ordinary paying people. In the "Treatise on the Scene" he describes the background, and he expresses himself thus:-- (See original text, p. 629).

380 We see that all is cared for, that can delight the eye.

Serlio distinguishes between three kinds of scenery:-- the comic, the tragic, and the satiric scenes. The first requires a representation of private buildings suited to petty business men, advocates, retailers and similar persons, but where the house of the ruffian, an inn and a temple must not be lacking.

On the contrary, the tragic scene prefers palaces and royal castles, public buildings, but the satiric has mountains, hills, rocks, some peasants' cabins, flowers and trees.

His last Section treats of the artificial stars of the scene,

where he goes into recepses and says, for example, what must be taken for producing a sapphire blue sky, now colors are made transparent, now beams of light may be cast with a new and polished shaving dish, now one makes a "beautiful and fragrant light" with burning camphor, now thunder and lightning are produced, when a stone ball is rolled and varnish powder (colophony ?) is blown through a light. But he demands one good thing, a pure skylight for lighting the stage.

380. Theatre of Buontalenti.

Buontalenti introduced in his Theatre behind the Uffizi in Florence a further innovation, when he gave an inclination to the parquet, as Serlio did to his stage floor; he also furnished it with a stage arrangement, which astonished all Europe and was studied. 216.

Note 216. In his "Geschichte der Barokstyles in Italien" (Stuttgart, 1887), Gurlitt refers to a full description of the decoration of this theatre by Baldinucci (p. 47) -- further to Furtenboch, S. Architecture civilis. p. 22, 23. -- More on theatres is stated by Gurlitt, p. 491-500.

The arrangement of the auditoriums approximates that of the modern theatre, when around an oval parquet are arranged partitions radially to this.

681 381. Theatres of the Bibienas.

With the appearance of Bibiena, theatre construction and its scenic equipment attained the highest artistic perfection; They were called to the countries of all rulers, and worked in Dresden, Munich, Bayreuth (1747); Antonio Galli Bibiena, who died in Milan (1774), was engaged in Siena, Pistoja and Bologna; Ferdinando Bibiena built in Mantua (1735) the Theatre completed by A. Lalluzzi, in which the interior was entirely constructed of wood. A beautiful work on "Architettura Prospettiva" was published by Giuseppe Galli Bibiena as theatrical engineer and architect (1740), in which in the magnificent compositions he subscribes himself as Architectus theatralis primarius (inv. et del). (First theatrical Architect).

382. Theatre Tordione in Rome; Theatre San Carlo in Naples.

The Palace Theatre in Parma (1618) was followed by Theatre Tordione in Rome, built in 1675 by Carlo Fontana, with six galleries vertically over each other, and then came the Theatre San Carlo in Naples, for which Angelo Carasale furnished

the plans. The interior of this largest theatre of Italy burned in 1816, but it was restored to its original condition.

383. Scala in Milan:- Theatre Fenice in Venice.

This was followed in time by the Theatre alla Scala in Milan (1774), then in 1788-1792 by Theatre la Fenice in Venice, (Figs. 569, 570), and in 1826-1828 by the beautiful Theatre Carlo Felice in Genoa. Other large cities like Siena, Florence, Turin, etc., followed the example.

384. Palace Theatre in Caserta.

Of the well preserved palace theatre -- the private theatre in the Palace at Caserta built by Vanvitelli (1752-1756),-- Figs. 571 and 572 represent the arrangement in plan and in the auditorium. Vanvitelli there returned again to the horizontal parquette of the hall, but he adopted the raised and inclined stage with traps, side scenes and ceiling drops. A proscenium with doubled Corinthian columns encloses the stage opening, adjoining which is a form like a colonnade, between which are arranged three tiers of separate boxes above each other. An uppermost tier of boxes above the columns supporting a broken entablature terminates at top the auditorium. Starting from the semicircular openings of these, ribs extend between compartments to the centre of the vaulted ceiling, dividing this in a suitable manner. (Fig. 572).

The amphitheatre is here dropped and gives place to boxes lying above each other, whereby all spectators are placed as nearly as possible equidistant from the stage, but also the inconvenience results, that the spectators in the upper galleries or boxes can only enjoy the actors and scenery in bird's-eye perspective, and have a doubtful enjoyment of what is offered. Then has theatre architecture made any substantial advance from Bibiena and Vanvitelli in 150 years? Scarcely, I believe! We confuse the arrangements of the antique theatre with the box construction of the Roman theatre -- that is indeed all -- and if thunder and lightning can be more faithfully imitated and better arrangements for artificial lighting can be provided, together with a higher degree of splendor in the house, then still remains merely the perfection of the machinery as an acquisition.

As already shown, the masters of the 16th century still adhered to the form of the antique theatre and amphitheatre, a

and therefore placed relatively few spectators on a comparatively large area, but under the best conditions for seeing and hearing; those of the 18th century created the innovation of galleries built vertically over each other with the development of a permanent and richly decorated ceiling of the auditorium. They placed many spectators on a small area, made possible good hearing and seeing in the house, with which men must take the tastelessness mentioned.

385. Theatre as a Building devoted to the Art.

The basal form of the auditorium returns to that of the Greek theatre to a certain degree, if we recall that there the outlines of the rows of seats are extended beyond the semicircle of the orchestra. Then in a higher degree is this the case in the theatres of the later Renaissance. The ground area becomes horseshoe-shaped. In the Theatre Fenice the outline is egg-shaped. The partitions of the boxes are arranged to correspond to this, and this line is extended on the stage. (Figs. 563, 570). Plan of the Greek stage building and of the Theatre Fenice.

The theatre must be a "building devoted to the art," a principle also recognized in its full extent by the later masters, and which was also expressed by F. Milizia (1728-1798) in his work, *Principii di Architettura civile*. He blames the complete lack of expression of the external architecture on nearly all theatres of his time, and refers to the exterior of the Theatre Marcellus in Rome in its "regular and noble beauty," in which the purpose of the building is directly made known. One must with shame speak of the facades of our theatres; even if it be not inscribed thereon; that is a theatre, who could mistake it?

386. Theatre Facade of Ferrarese.

In the year 1771 Vincenzo Ferrarese appeared with the publication of a theatre facade, which had great literary results, but at first found no imitation. Auditorium and stage are comprised in a circular structure and covered by a low dome. (Fig. 573 from Streit. p. 141).

The stage consisted of a low podium, that had as a rear wall a part of the common enclosure. This was animated on the exterior in its upper half by an engaged colonnade of a colossal order with rectangular windows and niches, while the lower

nalf was surrounded by a colonnade with horizontal entablature, covered by a terrace.

387. Theatre Facade of San Georgi.

That was a decided change in comparison with the elsewhere usual type of facade with projections like a temple, colonnades, flights of steps and driveways, without an individual expression. The suggestion did not remain without results, in spite of the objection at first. In the year 1821 appeared Pietro San Giorgi with a theatre design intended for Via del Corso in Rome, in which the auditorium and stage were also made recognizable externally. The former is placed in semicircular form before the stage building and with its conical roof extends beneath the pediment of the stage building. Arched passages are arranged after the antique model to surround in two stories the semicircular nucleus structure, a terrace roof covers this, from which rise a low addition with small rectangular windows.

388. The modern Theatre.

What San Giorgi presented had a happier fate, although not at first in Italy, but rather in Germany and France. Inspired by the same ideas, whether with or without knowledge of the plan of San Giorgi, Moller in 1829-1832 created his Theatre in Munich, then Gottfried Semper his Theatres in Dresden and Vienna, Garnier his Grand Opera in Paris, and Basile his Theatre Massimo in Palermo.

To the Italian architects belongs the fame of having given the earliest stimulus to modern theatre architecture, where the purposes of the different parts of the structure are made visible externally, and combined into an animated and more picturesque group. But they gave tone also to the classical theatre facades about the close of the 19th century. (Fig. 574).

389. Future.

But also the expressed external and internal round form has disappeared for the auditorium. It has again become rectangular as for the Theatrum tectum (roofed theatre) in Aosta and for the antique odeions, the semicircle gave place to the segment and this again to the rectangular ending. The circle began from the front. The combination of the amphitheatre and enclosed theatre with free or supported galleries in the

auditorium is the advantage for them today; and the highest gain for the architecture of theatre construction in general is the unlimited height of the stage building, compelled by the development and perfecting of its mechanical and scenic arrangements. Domination over the other parts of the building is therefore assigned to it in a manner visible afar. The stage house stands in its architectural mass and form higher than the building for the auditorium, for which the external form seems to have not yet been found. Generally the mechanicians control in the matter. Art must give place to the stronger and thus more suitable influence.

The corridors and abundant flights of steps of the antique theatre are transformed into richly decorated foyers, state and secondary stairways, that already occurred in Theatre Farnese in Parma (1613), and have to be considered in fit proportion to the number of visitors, which is a merit of the architects of the Italian Renaissance. The transformations of the antique day theatre into a night theatre was the impelling force for a new treatment also of these subordinate rooms and of the arrangements for passage. Likewise the milder climate in the countries on this side of the Alps, the pampering of their inhabitants, the gathering of hundreds of men into enclosed and out artificially lighted rooms, the addition of halls for supplying food and drinks, without which nothing goes on, and in regard to which the question may be put, whether the "cultured" public lingers for a few evening hours in the temple of the muses for the buffet or the play, and great clothes rooms, heating, ventilation and lighting arrangements, and an increased number of toilets is required.

These changed requirements must be satisfied today by the modern theatre architect, and to have brought them to a high state, together with the acquisitions for the stage, is the merit of our time, to which the public with its requirements and other needs gave the impulse. This is the ancient truth again, that innovations in the domain of architecture are only produced by necessity.

390. Sacred Theatre.

In addition to the secular theatre, reference is yet to be made to the so-called sacred theatre, which men were accustomed to arrange in churches. The famous painter and Jesuit fa-

627 Fatner, Andrea Pozzo, in his book, *Der Manler und Baumeister Perspektiv*, Part II, II, Augsburg, 1706, informs us of one such erected by him in Rome in 1695, which is represented in plan and by a perspective view in Figs. 575, 576. A peculiar flight of steps leads upward and in the enclosure for the play to be represented. Another of the year 1685 represented the Marriage at Cana in Galilee, which was arranged on the occasion of the exposure of the sacrament in the Jesuit church at Rome. Pozzo himself praised its magnificent architecture, that not only by day, but also particularly by night and candle light was uncommonly pleasing. To the rear surfaces of the clothed side scenes were attached candles, which lighted the front surfaces of the succeeding scenes.

Of the elevation he remarks, that this "represents the complete theatre with its lights and shades." It consisted of different parts, partly combined and partly separated, hence lighted by visible and concealed lights, which then on their part deceived the eye; when they were again placed in accordance with the art of perspective and as the extreme lines of of the work required here and there; so that indeed one would have sworn, that these side scenes were round, yet they were still entirely flat and even.

How proud he was of this undertaking, with what complacency he accepted the deception produced, is shown by his statement; "I well remember still, that I saw some persons, who wished to ascend those steps, before they perceived the deception, until they touched them with their hands!" Zeuxis and Apelles are orphan children in comparison! What not always could be attained on wooden framework with a covering of sacking, Pozzo allowed on the plastering of smooth stone vaults with his eminent knowledge and skill, even in monumental architecture, which will always continue to amaze.

What wonderful works in the decoration of church theatres were produced by a pious child-like faith, and still are, is also attested by the flower mosaics at the church festivals in Genazzano. What an account of taste and ability for such a transitory equivalent!

But A. Pozzo also busied himself with the arrangements of the secular stage. He gives rules for placing the side scenes (sliding pieces, etc.), (Fig. 577, from Pozzo), on a stage,

and he requires for this the length and width of the theatre to be assumed as known, the line OA representing the length of the theatre and MN its width, that a line is to be drawn from N to O , which must touch the front edge of the sliding side scenes, but not pass outside them; then he does not set them parallel to the line MN but somewhat inclined, yet parallel to each other as far as the background, which must be set parallel to MN . If then AO be made equal to AF , then the point F gives the distance of the spectator, if he is to see a correct representation.

391. Theatre for Passion Plays.

To be mentioned as representations in grand style in church theatre architecture are the passion plays continuing for several days, and their arrangements. They are at this time performances in daytime under the open sky, on a front and middle stage with an auditorium containing many men. (Oberammergau). On the middle stage with its scenic equipment are performed the chief acts, where it may be remembered, "that in the drama the stage is properly a subordinate affair, the acts and fates of men being the principal matter."

How otherwise today! How primitive appear the statements of Serlio and the rules of Pozzo for the arrangement of the stage. This might pass for the Shakspeare stages, but this view satisfies no longer. We strive for a permeation, a certain entirety of the poem in music or prose with the scenic equipment, we desire possibilities and realities, and not pasteboard surroundings for men of flesh and blood. And here have we attained higher things. For example, what would be the closing of Strauss' *Ariadne* without this principle?

392. The Nature Theatre.

In the gardens of the great appeared in all countries in the 18th century a further species of theatre arrangements, the so-called nature theatre with free play beneath the open sky in the daytime and without movable equipment. In the midst of other arrangements of the garden, it consisted of a moderately elevated area, to which led a flight of steps, and arranged with side scenes after the manner of the enclosed theatre, excepting that these consisted of high green hedges, with angles before which were placed vases, statues and groups of sandstone or marble. In the midst of the stage rises

generally also a small and open temple. The background likewise consists of well pruned hedges with passages and niches often in three series behind each other. The auditorium is constructed with stepped seats rising in amphitheatre form, the parquet and seats only covered by turf, as well as the podium of the stage. (See plan of the Dresden Nature Theatre and the design of Dumont in Part IV, Vol. 6, Heft 5 of this "Handbuch", and from these, Figs. 578, 579). All for the gay life of a lightly living and unconstrained high society:-- The king amuses himself, but not the people!

Besides the mentioned new Amphitheatre in Milan, there are yet on Italian soil, and dating from the Barocco period, arrangements for festival plays and races in Villa Borghese at Rome, the so-called Hippodrome (arranged after the manner of the ancients for races and riding exercises according to Percier and Fontaine), and the Amphitheatre in the Boboli gardens at Florence, intended for the festival games of the court, also to be mentioned in a great place surrounded by rows of seats and oak hedges at the rear of Palace Pitti.

Famous for its decoration was also the Theatre in Urbino built by Genga, in which was performed the first Italian comedy, the Calandra of Cardinal Bibbiena, friend of Leo X.

At the beginning of the last century (1808) and also in Italy, men proceeded to erect an open amphitheatre in the Amphitheatre of Milan, executed in monumental form by Luigi Canonica, which contains 30,000 spectators.

641 c. Universities, Museums and Libraries.

393. Universities.

The oldest great institutions for instruction must indeed have been the Museion at Alexandria (280 B.C.), the School of Philosophers in Athens, the High Schools in Lyons, Nimes, Constantinople, Cordova and Syracuse. On the Italian mainland are found the first universities according to modern language, yet not equipped with all faculties, (being mostly limited to the sciences of law and of medicine), of the 11th century in Ravenna, Bologna and Salerno. In Naples one such was founded by Frederic II in 1224, which was transformed in 1780 and was located in the Jesuit College founded in 1605. In the 12th century the Paris University first received a permanent corporate constitution, which became the starting point and model

for all later examples in the West.

Others were founded in Padua, Pisa, Ferrara (again established in 1404), Genoa, etc., that formerly already received a great attendance of foreign students. To these were added the different Jesuit colleges in Rome, Milan, Genoa and Naples, worthily so far as related to grandeur of arrangement; but in magnitude and beauty in architectural respects, these excelled all previously created. All come from monastery and cathedral schools and are products of the late middle ages or of the early Renaissance. Accordingly the buildings of the new institutions approximated the monasteries, where the rooms for instruction were grouped around a quietly located enclosed court, an arrangement firmly adhered to for reasons of suitability. Both free commons as well as groups of lecture halls were best so arranged. Here in the end were especially the Jesuit colleges, where the courts became true school courts, where high porticos more clearly indicated the purpose of the rooms lying behind them, than the low corridors of the monasteries, that rather corresponded to the cells of the monks. To the leading idea (to which also the Arab architects firmly adhered, as for the School of the Learned in Cairo), to group according to the antique principle the rooms for instruction and study around a great court, surrounded by airy porticos, and to give the building the character of a palace, was expressed in the most beautiful way. Science should dwell in dignity, sun itself in light rooms, not in "accursed and deep noles in masonry," lost in smoke and mould, surrounded by heaped skeletons of animals and bones of the dead."

The architects of the Renaissance understood now to impart to these courts a grand stamp with refined beauty of details and decoration. (Also see what is said in Section XVII, and the decision of Alberti there expressed on architraves and arcades for porticos). A permanent indication should also be placed there by the students, who formerly had received an academic degree at these high schools, by sketching on the walls their names and arms, among which are also found many Germans! Frequent also are the "countrymen's societies," that desired to make themselves known to future races -- the beginners of the later and still existing corporations!

394. University Building in Padua.

The cloisters of Brunellesco are recalled by the court of the University of Pisa, dating from the 15 th century. Of perfected beauty is the court of the University of Padua (642 (Fig. 472) built by Sansovino in 1555, with horizontal entablatures resting on columns and vaulted porticos, extending through two stories. So wonderfully beautiful is also the general effect of the columnar court of this University, so certainly the conception may also be ascribed to Sansovino, just as little can I make the master responsible for the details, especially in the upper story; the ornaments are too rude there.

The ancient lecture halls are small, the seats therein rising steeply in a half octagon, and arranged in an amonitheatre with 3 to 9 steps. The instructor stood at the wall with windows before the pier between two great window openings; the drawing or computing board lay horizontally before him on the table -- and thus it is the same custom there today! The room of Galileo is more than simple; it now contains the honorary gifts of foreign students (also of German), which were presented at the jubilee of the university. The great hall is a large and light room with modern seats; the walls are in a yellow pattern tone, from which the brightly painted arms of student corporations stand out effectively, just as on the walls of the halls and corridors of the Arcisignasio in Bologna.

Fig. 581 gives a representation of the facade of the university at Padua from an old engraving (Facciata della Università -- engraving from 17 th century in Italia Illustrata, No. 65), and Fig. 581 is an illustration of the silver staves staves of the beadle (mazze argentee dei Bidelli dell'Università). They recall to me the similar articles from ancient times at the University of Heidelberg. But these are preserved and not gone to "flute" like the flutes of Frederic the Great, as a Berlin palace custodian once explained to me. "Ora perduti" (lost hours) stands beneath the representations of the staves at Padua, that are designated as sceptres by us.

395. Pavia.

Pavia obtained a University by G. Visconti (1361) and a corresponding new building (1490) from Ludovico el Moro, which was enlarged (1770) by Pier Marini. Now court is added to a

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court, whose porticos are adorned by artistically valuable monuments of famous professors and prominent students, and serve for the exhibition of antiquities. A great stairway executed in Empire style merits particular consideration, as well as also the library with its contents.

396. Bologna.

On account of its charming court design the Archiginnasio at Bologna deserves especial regard. It was built as the seat of the University by Terrabillia (1562), but after its transfer (1803) into Palace Cellesi (Palace Poggi) with the court by Triacchini, was arranged for the communal library and a civic museum. Artistically of value is the anatomical theatre, formerly used for lectures, arranged by A. Leonti (Figs. 582, 583). The paneling of the walls and the coffered ceiling are entirely of richly carved wood stained dark.

397. Turin.

After the plans of the Genoese architect Ricca was built in 1713 the beautiful late Renaissance court of the University in Turin. (See Fig. 205 in Section XI).

398. Parma.

As a Jesuit college was erected the University in Parma under Ottavio Farnese in the 16th century by Galeazzo Alessi.

399. The Brera in Milan.

Likewise as Jesuit colleges were built in the 17th century the present University in Genoa (as already stated) and the Brera in Milan with its incomparably beautiful and grand courts and stairways. (See Section XVII; Court Facades).

400. Collegio Romano and Sapienza in Rome.

As the earliest example of such must be the Collegio Romano designed by Ammanati, and as the greatest the Sapienza at Rome erected with its majestic court.²¹⁷ This comprises two elongated wings with continuous arched porticos, which at one end are connected by a wall with an inner portico, on which opens from each wing a straight flight of stairs with landing in two branches, while at the other end is inserted a domed church with an exedra before it. These four structures enclose the simple and grand court, for which Michelangelo furnished the plans to Pope Leo X. After the death of Leo the building stopped, but was again resumed under Gregory XIII (1572), and was only completed about 100 years later (1680) under Al-

Alexander VII, who gave the building the inscription: "Initium Sapientiae timor Domini" (beginning of wisdom is fear of the Lord).

Note 217. Both are published in Letourouilly, P. *Edifices de Rome moderne*. Vol. 1. Pl. 170, p. 212; Vol. 2, Pl. 173, p. 373. Paris. 1860.

Here are taught gratis law, theology, medicine, archaeology, oriental languages and other branches of knowledge. A school of the fine arts was arranged in the halls on the ground floor; in the rooms of the fourth story was organized a "school of engineering" by Pius VII and Leo XII, which as it commenced at the beginning of the government of Pius VII (1800-1823) was able to hold its centenary festival at the beginning of this century!

The halls throughout have a depth of 34.5 ft. with a clear height of 19.0 ft. in the ground story, are of various lengths (up to 61.0 ft.), and have side light from the streets, usually two windows to 35.5 ft. width of room. The corridors measure 11.5 ft. in width and 19.0 ft. in height; thus nowhere are the dimensions restricted, each school hall being made spacious and airy. At the ground level and with rows of seats built in form of an amphitheatre are arranged the halls for perspective and for anatomy, for the latter may have served as a model indeed the interesting hall for anatomical lectures in Bologna, paneled in wood, at least in the mode of arrangement.

401. Museums.

Museums for statues, paintings and products of the minor arts and the art industries were not erected in the first period of the Renaissance as separate buildings for the exhibition of the objects mentioned.

The great men of Italy were indeed collectors intelligent in art, who placed particular value on acquiring antiquities; but they exhibited these in their spacious and magnificent living and social rooms. They entered into intimate relations with the art works; they loved them and would not lack the enjoyment of their daily surroundings; but they also desired to display to others these possessions, by which they instructed others and ennobled their tastes.

The beginning of the collection of art objects, which were

torn from their original connections, or whose possessions appeared especially desirable, goes back into the antique period. Already Ptolemy Philadelphus (284-246 B.C.) arranged in Alexandria beside the Library a museum for art objects, and this tendency was inherited also by the great and the rulers of the Italian peninsula, who there maintained themselves until the time of mighty political changes, and were then lost; but from the end of the middle ages it was aroused anew, and was cultivated to the highest degree again at the beginning of the Renaissance. What we now have as art museums in Italy, in Milan, Venice, Verona, Bologna, Florence, Rome, Naples, Palermo, etc., are buildings seldom erected for their purpose.

402. Bargello in Florence.

The Bargello, the present museum for the history of Italian civilization and art of the middle ages and the Renaissance, was originally built in 1255-1266 as the residence for the captain of the people, and then for the supreme judge (Podestà); then it became the seat of the police captain (Bargello) and a prison (1574-1782), and it was first arranged as a museum in the time of united Italy. The exhibition of art objects was dependent on the former purpose of the building; yet it was skilfully carried out.

403. Uffizi at Florence.

The Uffizi (Palace degli Uffizi) with its magnificent porticos (Fig. 584) was built in 1560-1574 by Vasari for administrative purposes, now contains in the uppermost story the famous collection of paintings, in the others being the National Library, the central Archives for Tuscany, and the Post Office. The loggias extending on the south, east and west sides of the elongated building, so rich in picturesque views toward Place Signoria and the Arno, are now glazed, and the adjacent rooms shelter the magnificent works of art collected by the Medici, and increased by the Lorraines. Likewise therein prevails not always the best light, not always the best proportions of the rooms, and only the so-called tribuna decorated by Buontalenti and Pocetti must be the sole hall, which was erected with regard to its purpose.

Moderate proportions in height, the walls covered with red damask, the surfaces of the dome incrustated with mother of pe-

pearl, the skylight is not large -- but the whole is a model and full of harmony! -- Likewise ideal and of peculiar beauty are the painted grotesques on a white ground on the ceilings of the upper great porticos by Pocetti (1580). 218

Note 218. One of these is reproduced in color in Roschdorff. Plates 47, 48.

Thus are also the conditions in Venice, Verona and Milan; the art works are piled up in old buildings of the brotherhoods and palaces, or former Jesuit colleges, with a frequently changed and corresponding equipment of the rooms.

404. Museum National in Naples.

In Naples the former Museum Nationale -- with its immense art treasures is indeed placed in a mighty monumental building, but which was not originally intended for this. It was begun in 1586 by the viceroy as a cavalry barracks, transferred to the University in 1615, and in 1790 was arranged for the royal collections of antiquities and paintings. The building recalls on the exterior its original purpose, and exhibits in plan (Fig. 535) on the middle axis a great three-aisled vestibule with an adjacent semicircular and grandly conceived stairway, that occupies the entire width of the three sides; on the right and left thereof are two open courts with surrounding vaulted corridors, that extend to the street fronts at their ends, and adjoining these are a number of rooms of different sizes for sculptures; in the upper story over the vestibule is found a vast library hall, the room for the picture gallery, the collections of small bronzes, the collection of coins, whose walls chiefly follow those in the ground story.

The exhibition of art objects is there technically good and very beautiful rooms, particularly in the tastefully decorated and well lighted rooms of the ground story. This monumental structure indeed remains a dry and academical work, but is not unsuitable for a museum, that cannot and should not count upon fixed permanence.

405. Museums in Rome.

Things are otherwise in Rome, even if there also old monasteries and palaces are not excluded as museums. (Palace Conservators, Museum of the Baths, Museum Laterana, etc.).

Here are first the structures of Museum Vatican, that from

smaller beginnings have developed in the course of time to independent buildings designed for the purpose, and have become leaders for the rest of cultured Europe

The beginning was made by Popes Julius II, Leo X, Clement VII and Paul III, with the Belvedere erected under Julius II. by Bramante. But since the good in the world is not accustomed to take a straight course, the endeavors of these art-loving rulers were restricted. Pius V (1566-1572) removed these collections, gave away some of their contents, and Clement XIV (died 1774) first decided again for the preservation and extension. Thus then originated under Clement and Pius VI, the Museum Pio-Clemente arranged by Visconti, and under Pius VI, (1775-1795) the hall of the Greek cross, the round hall, the state octagonal hall of the muses with the two square additions, all after the designs of Simonetti (Fig. 586). 219

Note 219. Reproduced from Letourouilly, P. & Simil. *Le Vatican et la Basilique de Saint-Pierre de Rome*. Paris. 1882.

There were added to the court of the Belvedere the round domed hall of the Bica, the hall of candelabras, and that of animals; to the originally square court with cut-off angles was added in 1775 the internal portico; in 1803 the angle halls were rebuilt as cabinets. Pius VII (1800-1823) planned the Museum Chiaramonte, and in 1821 caused Raphael Stern to add the Braccio Nuovo with its 14 antique columns of cipollino, alabaster and Egyptian granite. Gregory XVI (1831) further attached the Egyptian and Etruscan museum; Pius IX and Leo XIII likewise were not idle in completing and ornamenting the museums of the Vatican. that were intended to make their fame permanent in the world.

The arrangement of skylights and high side lights in the halls is consequently properly carried out in these new museum buildings for the reception of works of statuary, and have remained standard for all later allied exhibition structures. The placing of the sculptures in the great circular hall (Fig. 588), in the hall of the muses and in the Braccio Nuovo (Fig. 587) is a model and ideal, and it will then so remain also, so long as men demand for the beautiful products of art also a beautiful and dignified shelter!

The purpose of the museums has already become different in the last century. The intimacy between possessor and art work

had ceased; men no longer desired to enjoy alone the acquisitions obtained with toil and often at great cost; they wished them to be utilized for the use and profit of the cultured and of the great multitude of the people, all were permitted to take places at the great table, who desired to partake of the divine fare. This great cosmopolitan tendency could only arise in the enlightened time of the Renaissance, that should further produce fruitfulness until our days!

406. Libraries.

Great libraries were already possessed by the ancient Egyptians -- collections of books (rolls of papyrus), that extend back into the 19th century B.C. The Ptolemies in Athens must have had such; in the form of burned clay tablets with cuneiform inscriptions, were established permanent libraries in the Palace of king Assurbanipal in the 7th century B.C. Libraries for purposes of instruction and for common use, the older with works on wooden tablets, are made known from the prealexandrine period. On the Alexandrine are to be mentioned the magnificent library of the Museum in Alexandria, that before the great destruction by fire possessed 700,000 rolls, and that of Pergamon. These were built fireproof, surrounded by porticos, facing the east on account of the morning light; for the protection of the eyes were preferred floors of greenish marble; the bookstacks were closely set with frames extending to the ceiling, which were frequently made of costly materials (gold and ivory). A first public library in the grandest style was planned by Caesar in Rome. Augustus had such a one arranged on the Palatine; in the 4th Christian century were 29 public libraries in Rome. 220

Note 220. See Pouly's *Real-Encyclopädie der classischen Altertumswissenschaft*. New edition by G. Wissowa. Stuttgart. 1896-1900. Bibliotheken. p. 403-424. Also Clark, J. W. *Care of Books*. Cambridge. 1901.

Most of these treasures disappeared in the time of the migration of the nations; to the monasteries then fell the problem to collect the remainder, evidence of which is afforded by the libraries of the monasteries at Monte Cassino, Corvey, Fulda and S. Gall (Abbot Gosbert, 816-836). After the suppression of the monasteries, these books suffered further losses in times of war, and passed into the possession of states

or of cities.

651 In Italy at the time of the early Renaissance, Pope Nicholas V (1447-1455) called into life the Vatican Library. In Florence in 1444 a library was founded by Cosimo the Elder, which was permanently extended by the Medici, the Library Laurenziana. One saw in this collection little of the innate value, but so much the more of the external magnificence of their works, their beautiful manuscript, their ornamentation by miniatures, and their costly clasps and bindings.

Corridors and halls in one or more aisles are shown by the earlier designs, in which were placed desks for the folios, which were attached by chains, and seats for the readers.

407. Library Malestina in Cesena.

One of the earliest library buildings, the Library Malestina in Cesena, was built in the year 1452 for Domenico Malatesta by Matteo Nuzio, a three-aisled elongated room, covered by cross and tunnel vaults, the middle aisle left free for passage, only the two side aisles being equipped with desks for the 4000 manuscripts. The room is divided into 11 bays, and has windows on both long sides and thereby abundant daylight. (Fig. 590).

408. Library of S. Marco.

To this is allied the Library of S. Marco built by Michelozzo in Florence, whose plan and cross section are given in Fig. 589.

653 409. Library Laurenziana in Florence.

Both these may be followed as a more important architectural undertaking by the Laurenziana in Florence (1524), begun according to the design of Michelangelo and completed by Vasari and Ammanati, with its capricious antechamber and entrance stairway.

The room is also elongated here, but in a single aisle 36.0 ft. wide and 155.8 ft. long; it receives light from two sides through rectangular glazed windows, that commence 7.9 ft. above the floor with axial distances of 9.9 ft. The walls of the hall are divided by pilasters, and are animated by rectangular niches over the windows. The ceiling is of richly carved wood in panels and left in the natural color, the design of which is repeated on the floor in reddish-brown and yellowish clay tiles, executed by Tribolo. The stained glass is e

executed as grotesques on a ground of transparent white glass, thus but slightly obstructing the daylight. 221

Note 221. Good drawings of this hall with its vestibule, its equipment and its glass windows may be seen in Roschdorff. Pls. 31 - 37.

The beautiful carved seats with the reading desks (Fig. 591) and the ornamentation were designed by Battista Cinque and Cipriano; the drawings for the glass windows are attributed to Giovanni da Udine. (See Fig. 592, where is given the allied comparison of a glass window from Museum Bargello.

410. Library of Vatican in Rome.

The Apostolic Library of the Vatican, founded by Nicholas V as already stated, after the death of that Pope did not enjoy the same special care; it was rather neglected, and was only taken up again under Sixtus IV, was extended by Sixtus V, who caused the existing building to be erected by Domenico Fontana (1588), and which divides the great court of Bramante. The great hall, in which against the wall and around the piers are 40 low cabinets, designed to receive the manuscripts, is 232 ft. long, 51.2 ft. wide and 29.5 ft. high, covered by vaults, that rest on six massive piers. The magnificently treated interior exhibits paintings on the ceiling and walls; Pius IX caused the execution of the beautiful marble floor. Richly carved tables with costly marble tops and vases adorn this most magnificent of all library interiors. (Fig. 593).

411. Cathedral Library in Siena and other Libraries.

But this interior is excelled in beauty and artistic contents by the Cathedral Library in Siena (called hall Piccolominea and also Libreria), built in 1495 at the command of the later Pope Pius III, and adorned in 1503-1507 by frescos by Pinturicchio. The ceiling is formed as a tray vault with intersecting compartments, and is painted with extreme effect with grotesque ornaments in full colors. The lower part of the walls is covered by paneling 9 ft. high, and it is furnished with tables projecting 2.5 ft., on which lie the choir books furnished with precious miniatures. (Fig. 594) 222

Note 222. A good view of this interior is given by Plate 2 of the work of H. Köhler, Polychrome Feisterwerke, etc. Leipzig. 1870.

412. Other Libraries.

412. Other Libraries.

A change in the design of library equipment was produced by the invention of the art of printing, and therewith the multiplication of printed books, which required a different mode of exhibition. Instead of laying out costly and artistically works came the piling of printed books in cases placed along the walls and extending to the ceiling, divided in stories by galleries. In separate and richly carved closed cases we find the books exhibited in the Library of Philip II (1563-1584) of Spain in the Escorial (Fig. 595), where the lower cabinets receive folios, above which are provided tables for support, over these being the book cases adorned by Doric columns with shafts of different heights.

Thus was the arrangement in the Library of the Duke of Urbino, the book cases being placed against the walls.

The Ambrosian Library in Milan, arranged in 1603-1609 by Cardinal Borromeo, likewise exhibits the placing on shelves along the walls with a gallery extending around above the eight lower rows of shafts, and to which leads the small winding stairs. The hall is covered by a stuccoed tunnel vault divided in panels.

Notable are most state and city libraries of the Italian cities, which are never wanting, and in their arrangement exhibit a system allied to nearly all the last mentioned modes of exhibition. The tasteless modern bookstack, where mostly all artistic treatment of the book shelves is excluded, will scarcely be found in a building of the time of the Renaissance.

67 What we have today in our storage libraries is chiefly a mere combination of the older and newer Italian systems, in which book cases occur instead of desks, retaining the wide passage and the exhibition, such as we have learned to recognize in S. Marco in Florence, in Cesena and in the Laurenziana. Here again the Renaissance men are our instructors.

The Library building in Palermo may here be mentioned also on account of its grand court with the original division between two arcades placed over each other. (Section XVII; Courts. Fig. 486).

Until modern times extends the Library in Parma, established by the Theatine Father Pociandi in 1761, which was dedicated by Don Ferdinando de Bourbon in the presence of the Emp-

Emperor Joseph II, with its magnificent corridor for the exhibition of book cabinets and the grand reading hall, which was arranged by Maria Louisa in 1834. More than 300,000 printed items and 4,760 manuscripts are now contained by the library, whose rooms are magnificently decorated. (Fig. 596, from *Italia Artistica* No. 19, Parma, by Laudedeo Testi. 1905.

413. Library of S. Marco at Venice. (Biblioteca Marciana).

Not on account of its arrangement, but on account of its external form should be mentioned the library in Venice -- *Libreria Vecchia*. Built in 1536-1550 by Jacopo Sansovino for the library of S. Marco, it always still passes as the most magnificent secular building of Italy, but according to the opinion of Ja Burckhardt (*Cicerone*, 5th edition, p. 247), a after its most innate nature is nothing more than a magnificent piece of decoration (facade in Figs. 269, 270), and yet the antehall and the main hall with their ceiling decorations are not to be summarily set aside. Elsewhere he speaks concerning the building, of the "stiff shadows of the members," and names it the "finest two-story portico on earth." But a two-story portico is not to be decided by him, and "stiff shadows" is not a properly employed order of words. Furthermore the principles of the mode of exhibiting and of using books has become different in time. The facade system of the modern warehouse was still not the leading motive for their architecture.

1. Administrative buildings, Banks, Business Offices and Warehouses.

414. Buildings for Administration, etc.

Another link in the chain of public monumental buildings is formed by the service buildings with their offices for the high state and city governments. Likewise here were means not scanty; the corresponding structures are permeated by the same inspiration as those serving for the aliener purposes; the power and the dignity of the state should also be expressed in these works. The republic of Venice comes nearest to this aim by the so-called "Old Procurations" built about the end of the 15th century (1480-1517) by Bartolomeo Buono, Guglielmo Bergamasco and Pietro Lombardo, which reflects the expression of a "splendid and joyous existence." They served as official residences for the procurators of S. Marco, and con-

contained their offices, nothing more of which indeed is to be recognized now in the interior. Opposite these was erected in 1584 the so-called "New Procurations" by Vincenzo Scamozzi, which are arranged as a library and a royal palace, receiving their termination by the "New Fabbrica", to which was sacrificed in 1810 the Church of S. Genigiano built by Sansovino.

477 As the city offices and warehouses also served the "Fabbrica Vecchio" at the Rialto, built in 1520 by Scarpagnino, to which Sansovino later added the "Fabbriche Nuove", richly decorated by pilasters.

A warehouse with the offices of the German merchants, the "Fondaco de' Tedeschi", was ²²⁴ again rebuilt after the fire of 1505 at the cost of the State by Fra Giocondo da Verona (1506), and was simply treated on its exterior, but was adorned by paintings of Titian and his pupils on the facade surfaces, which have now disappeared. "If well preserved, the building would have been one of the first buildings of Italy."

Note 224. See Burckhardt, J. *Der Cicerone*, etc. Basle. 1860.

The most magnificent exterior is possessed by the highest administrative building of the State, Palace Doge, in its court facade by Antonio Breno and Antonio Scarpagnino.

479 On the contrary the Uffizi in Florence appear simple and earnest, which were built by Vasari about 80 years later than the Procurations and for the same purposes.

Between the splendid and gay architecture of Venetian masters and the earnest kind of the Tuscans stands the Cancelleria of Bramante in Rome, in which is expressed in the noblest and most dignified manner the purpose of the architectural structure, particularly in the expressive columnar court. (S (See the plans in the work mentioned. ²²⁵

Note 225. *Metzger's*. Vol. 1. Pls. 79-80.

Likewise the beautiful, though no longer existing Bank of the Medici by Filarete (Michelozzo ?) in Milan must still be mentioned here, a stately and earnest palace with rusticated ground story, beautiful entrance portal, 12 windows like Gothic in the upper story, and an antique cornice with consoles. (Fig. 9).

415. Portico de' Banchi in Bologna.

As the last massive building of this kind is named the Por-

Portico de' Banchi in Bologna, with its peculiar arcade facade with numerous windows.

"Certainly a work of an architect (Vignola) is the facade of the Bank on Place Victor Emanuele" -- built in 1562 according to G. Zucchinati (*Memorie e Studi on Jacopo Barozzi*, published on the 400 th anniversary of his birth by the care of an honorary committee. Vignola. 1908. Pls .9 and 10. p. 226 et seq.).

Jacob Burckhardt says of the building, that in its present form it first came from Vignola, "who in a very original manner knew how to subordinate a multitude of small rooms and window openings to a novel and grand main subdivision." On this Zucchinini remarks, that he knows nothing better to say, than:-- the novel division of the openings gives a grand character, but he also believes, that the numerous windows may not be pleasing, though this is again lessened by the symmetry and harmony of the main lines. Professor Haupt, on the plate of the facade (Pl. 19) of his book of plates of palace architecture of upper Italy, names a Carlo da Limido (1562) as the architect, and it is stated in Baedeker, that the building was restored in 1888. According to Milizia, Vignola had planned two small towers beside the two passages to the side streets, but they were never executed.

Zucchinini then published two representations of the facade of the Portico dei Banchi toward the Place, one of which, according to an engraving of the 17 th century, bore the annotation:-- "built in the year 1572, architecture of Jacopo Barozzi da Vignola." with the corresponding plan. That is indeed all quite beautiful, but what is correct? The authorship of Vignola must not be in question, but the artist must have included in the engraving quite large changes from the execution. In the engraving, the dignified and quiet palace facade, quite contrary to the reality, has in the mezzanine and the upper story arched and rectangular windows, like a modern warehouse,-- a sort of Jewish architecture.

The number of arches and of street passages, as well as their locations, agree in both drawings of the facade. Who then made the openings beside the windows in the middle ages? Was he really Vignola or the Carlo da Limido, not to be found elsewhere?

Likewise the continuous wrought iron parapet railing on the cornice before the windows of the upper story is not to be found on the engraving, just as little as any statement in a secular manuscript on the alteration of things. Also the great shields of arms above the two passages must indeed give place to the small windows. (See the engraving in Fig. 598, and further the present general view in Fig. 597, as well as the portion of the facade with three axes in Fig. 599). I could not now learn who made the alterations. The numerous and differing small windows may well have made possible a greater number of small and well lighted business rooms, but academically considered, the facades have not been beautified.

F. Malaguzzi Valeri, the intellectual author of the work, *L'Architettura nel Rinascimento*, 1899, p. 194, likewise recognizes Vignola as architect:-- "A well known building, certainly due to Vignola, is the Portico dei Banchi next Place Maggiore in Bologna." The structure was begun in 1560 and was not yet completed in 1565.

He does not hold the facade to be a work of a single man, but as an adaptation. He had to reckon with different arrangements on the building from the preceding time, and the requirements of his employer, to create a great number of sanitary and light business offices, and to produce results. So much for his excuses; but then the learned master still appears in the strongly treated building with arcades, porticos and pilasters, and a lattice of the long row of windows of all sizes. But if one considers the difficulties mastered, one must look on the entirety as again the victory of a gifted architect, who has conquered the difficulties opposing him.

This indeed was also expressed earlier by Jacob Burckhardt, and was only repeated in somewhat different words by Malaguzzi Valeri and Zuccolini, but the contradiction between the two facades was not solved thereby. Yet the two masters named are both silent concerning a Carlo da Limido in the year 1562.²²⁶

Note 226. For the restoration of the Palazzo dei Banchi Comm. Cesare Luelli first busied himself in 1887; the engraving mentioned is preserved in Archivio dell' Amme degli Ospedali; the restoration was conducted by the engineers Leonido Bertolozzi and Aug. Muzzi. The brickwork of the facade was left in ordinary brickwork, only the joints being struck with lime

mortar (later). A coating of plaster or color does not exist. The restored surfaces were only thinly coated with water-glass, but neither oil nor casein colors were used on the facade. The red color is the natural color of the bricks; the cut stone is from the quarries of Vergeto near Bologna, and for sandstone the so-called *Maicène* is used. This information I owe to the director of the waterworks there, Mr. Carlo Schmidle.

e. City Halls.

416. City Halls.

The city halls of the Renaissance, sometimes termed Palace del Consiglio, Palace Della Ragione, Palace Prefetizzio or P Prefettura, sometimes Palace Comunale or del Comune, Municipio, etc., adhere in their parts and the arrangement of the rooms more or less to mediaeval models, great assembly halls, small offices, house chapels, living rooms, wide and vaulted corridors opening on the street or internal courts, which permitted access to the separate rooms, a regular arrangement of the windows with usually imposing axial distances on the facades are the characteristics of these palaces of the city council. Sometimes appearing simple and defiant, sometimes of costly materials, glowing in colors and gilding, these appear externally.

The mediaeval models in Florence (See Fig. 600) and Siena, there a structure like a fortress, the latter a brick building, are furnished with defensive galleries and battlements, still mostly provided with square towers respectively 310 and 340 ft. high, -- arrangements that were also usual elsewhere for these buildings of the same time (Bologna, Vicenza, etc.).

417. Palace del Pretorio in Pienza.

This very effective accessory structure had a purpose and sense as a lookout and later as a signal and clock tower (Siena, Pienza, Bologna, Vicenza), it was retained still in the early Renaissance in like manner, as shown by the example in Fig. 601 by the small Palace del Pretorio in Pienza, built about 1450.

The open portico on the ground level, the massively treated upper story with its double round arched windows, that were picturesquely continued at the side, a not very high tower with the added battlements give to the whole a characteristic appearance, in which two tendencies contend with each other.

The construction of the tower was already carried out in 1895. The tower was built on a small hill, and the ground was levelled. The tower was built of brick and was 100 feet high. The tower was built by the architect, and the construction was completed in 1895.

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The battlements of the tower are already omitted on administration buildings and residences, where architecture already breathes a classic repose, while the small towers boldly look down upon the Place. (Fig. 601).

418. Palace Prefettizio in Pesaro.

An additional mediaeval flavor, but also distinctly bearing the stamp of the early Renaissance, is yet shown by the Palace prefettizio in Pesaro in its chief parts built by Duke Guidobaldo of Urbino, who died in 1508.

The arcade portico still has the form of the pointed arch on the side next the street, the ornaments frequently show a Gothic stamp; on the contrary the round-arched portico on the main facade rests on rusticated piers, above which are arranged 5 large windows without regard to the axes of the arcade. The window openings are flanked by Corinthian pilasters; the frieze above is decorated by palmations, and on each cap are two cupids with garlands, shields of arms and waving bands. The middle window is furnished with a balcony; a crowning cornice without consoles and with a great egg moulding terminates the building. The piece of magnificence in the interior is a great hall 52.6 × 132.0 ft., with a painted and carved coffered ceiling, with octagonal between lozenge coffers, whose great rosettes rise from a blue ground, 227

Note 224. A sketch of the facade is to be found in W. Lübke's *Zur Italienische Kunstgeschichte*. Zeit. f. Bild. Kunst. Vol. 5. 1879. p. 355 et seq. A view of its present condition is shown by the photographic illustration in Fig. 20. According to the *Intersia* in *Italian Artistica* (Pesaro), No. 42, illustration on p. 20, the building had a series of battlements and a balcony at the corner.

419. Palace del Comune in Ancona.

A mixture of forms, as on the City Hall in Pesaro, is also found on Palace del Comune in Ancona, built in 1470 by Francesco di Giorgio, where the court is surrounded by pointed arcades with archivolts like the antique, that rest on massive piers, in which small angle columns are inserted after the mediaeval fashion, while pilasters with palm capitals animate the surfaces of the piers and show themselves as works of the early Renaissance. (See the cross section of the pier in Section XVII; Courts, Fig. 471). As further works of this phase

of the style appear the two entrance portals to the court of the City Hall, which are treated after the style of the Roman triumphal arch, when they exhibit slender composite columns beside the round-arched openings. One bears the date of 1400, while the upper and richer one by Matteo da Ancona is dated 1493.

420. Palace del Podesta and Palace Comunale in Bologna.

The present City Hall in Bologna, formerly Palace del Podesta, dating from the beginning of the 13th century, was partially rebuilt after the fire by Pieravante Pierawanti in 1428, and was mentioned among the Bolognese palaces. (See Art. 175, p. 352). Notable there is the reappearing great portico, the so-called Hall de Re Enzo.

664 Palace Comunale or del Governo in Bologna likewise dates from the middle ages (begun 1293, until the most recent time furnished with various additions and rearrangements, also containing a stairway by Bramante (1509)), is a massive structure with galleries, halls with frescos, courts, stairways and decoration by statues, furnished with a pointed arcade and battlements next the Place, and with a heavy clock tower with Barocco spire at the angle, with the heavy mediaeval tower added, as well as to the before mentioned City Hall.

As the most important parts from the Renaissance period are to be designated the clock tower and the enclosure of the main entrance, that was by Galeazzo Alessi.²²⁸ enriched by a niche structure by D. Tibaldi (1581). -- The round-arched entrance gateway is flanked by coupled Doric columns on pedestals and supporting a triglyph cornice, over which extends a balustrade, above which appear coupled Ionic columns with a massive low pediment. In the midst of the shrine thus formed in the upper story is arranged a flat niche spanned by a round arch, in which is enthroned the blessing and seated bronze figure of Pope Gregory XIII (Buoncompagni from Bologna) executed by Manganti. Below the figure appear effectively the great papal arms -- on the whole an equally beautiful and massive portal structure of the advanced Renaissance, but which in spite of its other style forms, nowise influences the effect of the facade in general.

421. Palace Rector in Ragusa.

In the category of the previously mentioned city halls bel-

belongs to Palace Rector in Ragusa with its interesting columnar portico and the court with open stairway, but which was first added in 1667. The building itself was planned in 1338; in 1435 was destroyed by a powder explosion; it was afflicted by a similar catastrophe in 1462. In 1464 Micelozzo was called on for an opinion concerning its restoration; with him came a native Dalmatian, Giorgi Orsini, who then indeed had to put the building in order again, since this probably merely referred to improvements. 229

Note 228. See Moloġuzzo-Voleri. p. 210 and Fig. 73; also Fig. 611 of this Section.

Note 229. Also see Berlepsch, H. E. and F. Keysser. Bauten in und um Ragusa. Zeits. f. Bauw. p. 217 et seq.

422. Palace del Consiglio in Verona.

Fra Giocondo (1435-1517) broke from mediaeval reminiscences in the Palace del Consiglio at Verona. His authorship is now doubted.

The work breathes cheerful repose and gayety; everything gloomy and dull in its nature is forbidden. A deep loggia with round-arched arcade on marble columns, where the arches are placed directly on the capitals resembling Corinthian, forms the ground story, that is only raised 5 steps above the street and is separated from that by a balustrade; above it rises an upper story subdivided by pilasters and with magnificently beautiful double windows, terminated by a main cornice like the antique, on which are placed free figures corresponding to the pilasters. Members of the cornice, panels of pilasters and capitals were gilded, the wall surfaces were divided into panels and brightly painted with the noblest treatment of all details. In the full sunshine, with the blue sky, a wonderful architectural view, that the preceding art epoch flung down among surroundings amid the scorn of enemies; The interior is greatly changed, but still contains some beautiful marble doorways. (See a drawing of the facade in Fig. 97.

423. Loggia del Consiglio in Padua.

At the same height stands the precious loggia del Consiglio in Padua built by Biagio Rossetti, an early Renaissance work of the noblest kind (Fig. 602), constructed of white limestone. On a high base rests the portico, to which leads a massive flight of steps. The windows of the upper story are gro-

grouped in pairs and threes, above which are built quiet and broad wall surfaces and a rather dry main cornice.

424. Palace Comunale in Brescia.

Likewise with noble general appearance is the Palace Comunale in Brescia begun by Formentone in 1503, and called "the Loggia." The building stands detached on all sides, and in the ground story is divided in depth into two portions of unequal size, one of which is occupied by the very effective portico supported by 4 columns and spanned by 9 cross vaults. (Fig. 603).²⁸⁰ Peculiarly inserted Corinthian wall columns subdivide the massive piers, that receive the upper story. The spandrels of the supporting arches are adorned by sunken medallions with busts of Roman emperors. The wall surfaces of the upper story have rectangular windows, that are enclosed by pilasters with richly ornamented entablatures, and are further subdivided by the pilasters of the story. The elongated panels arranged at right and left of the same are decorated by medallion disks of dark marble, while all other parts of the building are made of white marble; an antique entablature with rich frieze terminates the facade at top, which is further crowned by a balustrade with projecting vase-bearers as water-spouts. The exterior is more pleasingly beautiful than earnest. The windows in the upper story were attributed to Palladio and the frieze to Sansovino; the balustrade is of later date, as well as the octagonal structure erected behind it and unfinished.

Note 230. From Houser, A. *Stil-Lehre der architektonischen Formen der Renaissance*. 2nd edition. Vienna. 1899. p. 35.

In the year 1575 a fire destroyed the great hall and the vaulted roof covered with lead, whereby valuable paintings ascribed to Titian were also destroyed. Vanvitelli injured the exterior by his restorations (Fig. 605), and now (1902) men wish to lay hands again on the building and to destroy the wonderful work by rebuilding, instead of piously preserving it!

425. Palace Pretorio in Lucca.

As an expressed and austere work of the Italian early Renaissance (15th century) is yet to be named the Palace Pretorio in Lucca by Matteo Civitale (?), which exhibits on the front a portico with four semicircular arches resting on columns.

on which rests the upper story with Tuscan double windows and open upper round panels. Above this is arranged a half story with small rectangular windows and a Corinthian cornice with consoles.

426. Basilica and Municipio in Vicenza.

The so-called Basilica in Vicenza and the Palace del Capitano (now Municipio) lying opposite it must be mentioned here as indeed the most splendid communal buildings. The nucleus of the first, formerly Palace della Ragione, with the adjoining narrow red brick tower 268 ft. high still has pointed arched architecture, and it was first enclosed in 1549 by the wonderful porticos of Palladio executed in white marble. The plan (Fig. 606) contains at the ground level within the four walls a hall covered by cross vaults, whose ceiling is supported by 12 piers. The stairways to the upper story lie free within the enclosure and lead to the mighty hall with a single aisle, which is covered by a cloister vault constructed with log arches (Fig. 607). To resist the side thrust are arranged two iron ties above each other, which are omitted in the illustration mentioned, in order to not disturb the form of the roof and of the descending ribs. 231

Note 231. Likewise in the so-called hall of the medieval Palace della Ragione -- built as a "Basilica" in 1172-1219 in Padua, one hall has an area of 272.8×91.9 ft. with a height of 78.7 ft., but which was only erected in 1420 -- the similar ribs are composed of 2 thicknesses of logs, and are likewise anchored twice in height, when the tie-rods are twice supported. The longitudinal connections in both cases are made by the internally visible sheathing of boards; the side thrust is directly resisted by the aforesaid iron tie-rods attached to the pairs of ribs.

668 The exterior at all events belongs to the most magnificent works of the later Renaissance, at the same time being the chief work of Palladio (Fig. 608), constructed of solid and most durable and dignified material with the use of great ash-lars, such as shown by the keystones of the arches, that are all through stones, as well as the architrave, for which only entire slabs were used. Not easily would be found a grander and more beautiful architectural structure on God's broad earth, than when from the side street on which the Municipio

stands, one allows the gaze to fall on the basilica across the Place, yet more massive in effect under the setting sun, when tower and roof appear marked by the glow, while the light gray architecture of the Basilica is covered by a bluish haze, and quiet and silence prevail on the Place!

427. Bell and Clock Towers.

If it has been mentioned, that for many secular buildings, to which were then added lookout, signal and clock towers, as well as bell towers (campaniles), and these are to be characterized as effective architectural accessories, then in most cases in connection with public buildings, these play an important part. They enhance the effect and importance of a structure, and frequently determine the character of the view of the city.

428. Historical.

They were originally erected for reasons of fortification in connection with the defensive works of a city, as by the 669 Asians, Greeks and Romans. In this sense they still played an important part in the middle ages until in the time of the Renaissance, or until the use of the heavier artillery.

The emperor Constantine assigned to towers a more extended role, when he also furnished the Christian Houses of God with such, in order to call the believers to the divine service by far resounding bells. They became bell supporters, campaniles (campana = bell), simple, isolated tall structures equipped with openings for sound and roofs. It was left to a later time to create an organic connection between bell tower and God's House. Likewise Islam made use of the arrangement by erecting minarets at its mosques, for an elevated platform for calling believers to prayer. In time they announced the hours to the inhabitants of a city. Prominent Romans arranged for the announcement of the hours for their private use by slaves designated for this purpose in their residences. | Soundless, yet visible for the great multitude, men employed from the earliest time sun dials for determining the hours, which were exposed in public places (Pnyx in Athens, Pergamon; see Vitruvius, Book IX). They were invented by the Chaldean Berosus (Berosus?). Chaldean, Phoenician and Egyptian priests, Grecian philosophers, physicists and astronomers busied themselves with their construction, and Democritus wrote a

treatise on them in 410 B.C. The sun dial wandered in later times to the wall surfaces of the bell towers of Christian churches. These had then the twofold purpose of calling to prayer and of giving the time -- the latter office at least during clear weather and sunshine.

430. Tower Clocks.

670 The Church gladly utilized the twofold purpose of its towers, that had become a Christian characteristic; but also secular rulers desired to consider them as arrangements for giving an alarm and for showing the hours of the day. Thus also for secular officials they had the same twofold purpose and importance of their authority. The sun dials could not serve on all days and seasons of the year and were no longer satisfactory, so that men sought new means for announcing the hours, and adopted the striking apparatus, that would sound afar the passage of the hours to the city dwellers, and with it was joined also a great figured dial with indications of the hours. The evolution may be made clear by an example:-- in the year 1174 the Bessari family built a residence with a tower on Place delle Erbe in Vicenza, which was sold to the community in 1226, and in it the podesta with his family took up his residence. The tower constructed of red bricks was then carried to the height of the double windows, that is to the belfry, and in 1446 was extended to a height of 269 ft. with an unchanged plain breadth of 23 ft. It first received a bell 671 in 1320, and in 1377 the first clock was equipped with a striking bell, "which should give the stroke of the hour to the entire city." After it withstood an earthquake in 1347, it was furnished in 1326 with another bell, the "bell of the realm." The figure dial today still occupies the 23 ft. width of the tower, and is inserted at the middle height of the tower (Fig. 609). From the palace tower, through the bell tower with striking apparatus, hands and dial -- the fate of so many others. This last arrangement was also later adopted by the Church in regard to its own tower structures. After it had combined bells into the "artillery of the clergy," according to a phrase of Napoleon, the far resounding stroke of the hour could not be wanting.

432. The Clock Tower in Padua.

A purely clock tower (tower of the clock) was built on the

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● 411 ● 412

Palace del Capitano at Padua ²³² by Falconetto (1458-1534) in stately magnitude, although the palace as a whole is not of high importance; then that erected in 1496-1499 at the entrance into the Merceria on Place S. Marco at Venice. On its platform stand two bronze giants (by Rizzo), who strike the number of the hours on a freely suspended bell. The work is now ascribed to Mauro Coducci from Bergamo, the gilded Madonna there must be from the workshop of the Lombardi. (See Fig. 610).

Note 232. An illustration in "Atello Artistico," No. 6. P. Padua. p. 130.

434. Udine.

A repetition of the motive of the bronze bell striker is found on the clock tower in the vicinity of Palace Civico at Udine. (See Section XXI, Fig. 682; marketplace in Udine).

435. Bologna.

Of high interest are the "Historical Notes" of Alfonso Rubiani on the Clock tower of Palace del Progetto di Ristaurò (1492-1550). Its present form and its location on the angle of the massive building behind the mediaeval battlements and above the three story Gothic arcade structure, is retained in general and has only experienced a change by the form of the dial and the addition of a madonna high above this, after the model on the clock tower at Venice from the time of 1492-1499.

672 Accordingly but two groups are to be distinguished, one of which has for a model the arrangement of the tower above the defensive gallery, as on Palace Vecchio at Florence, the other adopting a tower structure developed from the ground upwards, which is expressed in the most perfect manner on the City Hall at Siena.

436. Signal and Bell Towers.

Otherwise treated and still more separated in elevation are the lookout, signal and bell towers, for which the Tower of S. Marco (Campanile di S. Marco), 321.5 ft. high, the Campanile at Venice, has remained determinative.

Its erection was begun about the year 900 -- originally conceived as a clock tower (Torre dell'Orologio) -- it was restored in 1148 and 1329, rebuilt in 1512 and fell in 1902, its rebuilding commenced in 1905 in order to stand again in its original form.

Fig. 612 shows its plan, section, and the kind of foundation before the fall, according to my Essay in the South German Bauzeitung (Munich, 1902), to which I must refer for the details. The substructure was and is again subdivided vertically by bands and terminated by a belt cornice, above which rises an open loggia with four openings on each side, over which is arranged a structure like an attic without windows, on which the square pyramid of the tower cap, with an angel figure at the apex, forms the termination.

Figs. 612 to 615 show what the Italian architects have made of their Campanile since the great misfortune. The illustrations are taken from the French journal "L'Illustration" of April 20, 1912.

438. Rebuilding the Campanile.

Good conclusions have not exactly been wanting to the invited Italian technicians, who were also never agreed on what should be done. From Germany and Austria came many fanciful opinions on the causes of the fall, and still worse ones on the rebuilding of the tower in the "spirit of our time" (where is that?), and also concerning the building material to be employed. As if the native land did not offer the best! In Italy at most Milan or the Riviera could present innovations in style. But sound sense remained victorious, and it was rebuilt again in the same way in which it was destroyed. The external architecture was retained, but the construction in the interior was made lighter and also better, whereby the weight and the pressures on the soil beneath were reduced.

The ancient piles were properly left; but the new were added in increased extent; the new piles surrounding the old were driven deeper to the "clayey ground" (Fig. 615).

The ancient stone foundations were left to the internal surfaces of the walls of the old, or also of the new tower, which are equivalent, but from these new ones were constructed to the outside of the piling, that bears the masonry of the new tower, i.e. the external walls. (See Fig. 613, section through the new building). Thus after mature deliberation the correct mode was found, and the usual good work of the Italians in architectural structures affords further guarantees. Fig. 614 gives the construction of the new apex of the tower with the angel figure.

f. Hospitals and Asylums for the Poor.

439. Hospitals.

"A dreary purpose, but a cheerful exterior," says Sabellicus of a Venetian hospital, and this saying is true of most hospitals of Italy.

Like churches and palaces these buildings were also conceived with "Renaissance art rejoicing in beauty," whereby magnitude and suitableness were not left out of consideration, but still arouse our astonishment.

Whoever indeed desires to apply to these buildings and their arrangements the scale, that our present physicians on this side of the Alps have created, would make a mistake; but he also goes amiss, if he believes, that the Italians of the 20th century do not understand how to adopt the good points of our arrangements.

These monuments of the piety and noble feeling of the citizens and monarchs go back in Italy till in the 13th century, from which time date the Hospitals of Maria della Scala in Siena and that of Maria Nuova founded in Florence in 1285, both highly regarded at the beginning of the Renaissance. Both institutions were surpassed by the erection of the Hospital Maggiore in Milan.

440. Hospital Maggiore in Milan.

Filarete gives detailed information concerning the latter in his Treatise on Architecture, ²³³ where he introduces a report to his prince with the words:-- "I wish to specify to you, now I have built in Milan and describe to you its arrangement. After the site was decided on, the extent of the building was fixed at 768 x 306 ft., that should be beautiful and also at the service of sick men and women, also of illegitimate children." He further lays a particular emphasis on the convenience and cleanliness of the privies, which arrangement would correspond to the location of the city ditch, that flowed along the site of the building, which could also be utilized for reception of all garbage produced in the hospital.

Note 233. Published by W. von Oettingen. Vienna. 1890. p. 332 et seq.

Filarete then describes the detailed dimensions of his plan, its foundations and the sewers within the same, ²³⁴ then the ground story, the location of the bottom of the cellar, that

he places 1.9 ft. higher than that of the watercourse, into which the privies emptied, then these themselves; between each two beds is a little door, that leads into the vault, where the sick find their seat with the opening, through which all sewage passes into the ditch in which the water runs. In the latter the water washes away everything, and no odor can appear, since these privies first have the further excellent arrangement, that they are always closed, through which the water runs and is soiled, and since further at every 19.2 ft. apart are arranged two air shafts carried upward through certain piers. If these privies should ever smell badly, then are they ventilated through these flues, that extend above the roofs. But they receive the rainwater from the latter, which they conduct into the sewer.

Note 234. See the same. p. 338.

Then comes the arrangement of the external and internal stairways, then the arrangement of the subordinate rooms as dressing rooms, dispensaries, bathtubs, etc., and further those of the sick wards, of the principal court between the divisions for men and women, the dead vault, the dwelling of the clergy, the hospital church, the plans of the men's and women's divisions, the housekeeping, etc. Nothing is overloaded and nothing is forgotten; all is considered; the architect does not lose himself in the facades; he places particular value on the suitability and the technical details.

To the Treatise considered are added a ground plan and a drawing of the facade, which we reproduce after Oettingen's Essay in Figs. 616 and 617.

But of Filarete's plan only the right wing was executed, and that merely in a simplified form. The corner stone was laid with great ceremony on April 4, 1457, and the building was carried on by Filarete himself until 1465, at which time he was forced to yield to the intrigues of his Milanese superintendent and colleague. "I am hated here," he wrote at that time in regard to the treatment experienced by him. After his departure the building was continued by Solari and other Lombard architects. By Riccini (1624) was completed the magnificent principal court surrounded by Renaissance arched porticos, Carlo Buzzi and Giorgio Rossoni after Riccini undertook the continuation of the work, and brought it to an end

678 in 1806.

679 The work thus continued for three and a half centuries. For its external architecture, that according to the preceding lacked any unified character, there always remains the pointed double windows already mentioned, that exhibit the interesting combination of Gothic and antique forms, and the window enclosures made of deep red terra cotta with their ascending vines and cupids climbing therein, are a title to the fame of Filarete and the awakening Renaissance.

Nine internal courts partly surrounded by porticos were erected in time as in the plan of Filarete, enclosed by the various buildings of the institution, that made possible a separation of the different sick persons, and these were of such great dimensions, that the separate structures received light and air in abundant measure. The same is also true for the vast halls for the sick, in which the beds were widely spaced, and in which the sick were assigned an air volume, such as in no other hospital in the world. 236

Note 236. F. Cossino in his work, "Le Fabbriche più cospicue di Milano (most prominent buildings of Milan), gives the plans of the existing arrangement with the remark, that in regard to the grandeur of conception and of richness in execution, it must be named in the first place in Europe.

680 The domed church building with four small flanking towers like minarets, taken into consideration by Filarete, in the midst of the great middle court, the lost monument of the Christian religion, was omitted and compelled to give place to a moderate hospital chapel, that partially occupies the middle part of one side of the great Riccinini court.

441. Hospital S. Spirito in Rome.

As a foundation from the time of Innocent III should be named the Hospital S. Spirito in Rome founded in 1198, that by additions made by Sixtus V and after him by Innocent VIII was extended to be the most important hospital in Rome. Many of these were erected by Baccio Pintelli, perhaps also by Pollajuolo, others by Antonio da Sangallo and by Fuga. The altar in the middle of the great hall is by Palladio.

The building now contains a vast hall in a single aisle for fever patients, one adjoining it at right angles for wounded persons, rooms for surgical operations, also large and small

rooms for different patients, altogether being 12 halls with 1680 beds; then an anatomical museum, a library, dispensary, instrument room, etc., and in addition the hospital for foundlings and another for those with infectious diseases; these rooms can contain 800 and 500 foundlings (Fig. 618).²³⁵

Note 235. From Letarouilly. Vol. 3. Pl. 236.

Another plan in Rome yet seems worthy of mention on account of the unusual simplicity of the building; the Hospital S. G 681 Giovanni de' Genovesi dating from the end of the 15th century, founded by the Genoese architect Maria Puce Gigala. Much has also been changed in this hospital in the course of time; yet the court has remained untouched.

442. Hospital degli Innocenti in Florence.

As a predominant architectural undertaking must be designated the Hospital degli Innocenti in Florence, that was begun by Brunellesco in 1419 at the cost of the silkworkers' guild, and was extended in 1427 by Francesco della Luna, but was only completed in 1451. Its wide and airy porticos above a high flight of steps, constructed of grayish-green Macigno sandstone, with the charming terra cotta medallions of Robbia as ornaments of the arch spandrels, with the low upper story and its simple rectangular windows with angular caps and plastered wall surfaces remain an inviolable work of the Florentine early Renaissance. Of the architectural treatment of the square internal court Fig. 619 gives information, while Fig. 620 affords an illustration of the entire arrangement of the plan.

443. Ragusa.

Florence exhibits in this building one of the first foundling asylums, contrary to which the suburban pile of Ragusa claims to possess one of the first foundling hospitals in Europe. (1432).

444. Genoa.

A larger hospital is the Hospital for Incurables in Genoa named Parmentone, built under the direction of the architect A. Orsolino in 1420 at the cost of a learned jurist, with its court measuring 65.6 x 113.1 ft. and its sick halls 311.7 ft. long and 36 ft. high. Through the portal executed in white marble, a grandly arranged vestibule leads the way into the interior into an astonishingly beautiful court. At first only

682. intended for women, it was enlarged for men by the addition of another structure. Interesting for the sick halls is the mode of removing wastes and of ventilation (Fig. 621). This is effected by an original system, when between the ceiling of the hall and the floor is left a space, supplied with exhaust flues and lighted by little windows in order to make possible an effective ventilation through the space. According to this the openings from the hall are arranged with valves regulated from below, through which may pass the foul air from the hall without any need for opening the windows.

445. Pistoja.

In conclusion and to confirm the statement of Sabellicus who was again conceived the Hospital del Ceppo in Pistoja, whose founding also extends back into the time from 1277, but which was restored and adorned by the splendid front building, with the airy portico and its ever beautiful and brightly colored majolica frieze by Robbia (1525-1535), representing the seven works of mercy. Can there be a more elevating exterior, a relatively richer decoration for a hospital than this frieze?

446. Hospital for Plague Patients in Verona.

A hospital for patients ill of the plague and of other epidemic diseases was built for the city of Verona by Sanmicheli. Its plan was published in the work mentioned below.²³⁸ Around a court 787.4 ft. long and 357.6 ft. wide are arranged small adjacent separate cells 15.0 × 15.0 ft. in area with a corridor before them 10.6 ft. wide and 15.0 ft. high. The court, with a small church at its middle, is subdivided by walls into four parts of irregular form, so that a fourth of the church may always be seen by the occupants of the cells in one part of the court. Adjacent to the cell structure are the a
683 administration rooms and the service dwelling of the director.

Vasari says of this building, "that it could have been much more beautiful, if among the founders had been found some persons with larger souls."

Note 237. From Hittorf, J. J. & L. Zenth. *Architecture moderne de la Sicile*. Paris. 1835.

Note 238. Ronzonier, F. & J. Luciolli. *Les Monuments civils, religieux et militaires de Michel Sanmicheli, architecte Veronese*. New edition by E. Dantoux. Genoa. 1878. Pls. 58-60.

447. Alms-houses.

447. Almshouses.

Other structures based on benevolent foundations are the asylums intended to receive the poor, mostly extensive, and known in Italy by the name of Albergo dei Poveri (Lodgings for Paupers), which entirely belong to the late period. They are all more or less houses of benevolence and correction. Paupers of both sexes and all ages were received; orphans and foundlings learn a trade; men and women are required to labor in all ways; benevolence opens an asylum for the defective; justice provides rooms for the punishment of the guilty.

448. Genoa.

One most worthy of notice and of the largest designs as an asylum for the poor is possessed by Genoa in its Albergo dei Poveri. ²³⁹ This building was commenced in 1654 after the plans of Antonio Corradi, but was only completed by Baptista G Ghio. It has an exterior 540 × 475 ft. The structure was begun in 1746 by the architect Orazio Turatto, but was never completed. An atrium surrounded by columns lies before the church of the institution; two columnar courts are arranged at the right and left of the same, that are adjoined by work-rooms, dormitories and refectories with their accessories.

450. Milan and Naples.

For the same purpose was built in 1759 in Milan the House di Lavoro by the architect Croceo, and by Fuga in 1751 the Reclusio or Seraglio in Naples.

g. Prisons.

451. Prisons in Rome and Venice.

The endurance of loss of freedom for definite times is a measure, that only belongs to the modern period and came in during the second half of the 16th century, indeed proceeding from England, Holland and the German North. Innocent X built in Rome the Prison known as Carceri Nuovi for the separate confinement of young vagabonds and the like in the years 1644-1655, and Clement XI erected at the same place in 1704 a so-called House of Correction.

452. Prisons for isolated confinement.

But already earlier the republic of Venice had built in the Carceri or Prison Criminali a prison with small separate cells after the designs of Antonio da Ponte (1589), which as a pri-

prison for lesser criminals is still in use, and of which John Howard said in 1780 in his book on prisons, that it was the strongest that he had ever seen, and that no fever and no notable disorder was found therein. And Thomaso Temenza writes in the biography of da Ponte, that in all Europe was not such a commodious, strong and splendidly constructed prison. It is built of Istrian limestone, has small and wide windows with doubled iron gratings, and receives 400 prisoners, exclusive of the unhealthy cells, that have no light and ventilation.

It is worthy of note, that the cells are not placed next to the external walls, but that a narrow passage extends there, from which alone one passes into the cells. Any communication with the external world, such as is always possible in our modern cellular prisons, even with the elevated positions of their windows, appears to be excluded here (Fig. 623). This prison was connected with Palace Doge by the Bridge of Signs erected (1595-1605) by Antonio Contini. Its peculiarly characteristic architecture has become typical for the prison construction until our time, though certainly generally with the omission of the rusticated pilasters (Fig. 624). 240

Note 240. I may not omit to mention, that the provision of a passage next the exterior of the prison was likewise made in S. Petersburg, and then by me in the great Prison in Karlsruhe.

n. Granaries, Exchanges, Market Halls and Porticos.

453. Granaries.

Granaries were already in use in antiquity. 241 They maintained themselves in the middle ages and also in the time of the Renaissance in the great emporiums of commerce. In Florence was built on the site of S. Michele in Orto in 1234 an open grain hall, wherein only the lower story served for commercial purposes, while the upper rooms were used as granaries until the middle of the 16th century. This structure did not remain unaffected by Renaissance art, when Donatello (1413), Verrocchio (1483) and Giovanni da Bologna adorned it by statues.

Note 241. See Part II, Vol. 2 (Figs. 716, 717), 2nd edition of this Handbuch.

To Galeazzo Alessi is attributed such a utility building in Genoa (1620), whose plan and section are reproduced in Figs.

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625 and 626. ²⁴² Four five story storehouses are connected by a common vestibule and form a stately and simple whole, that still does not lack the ornamentation of the facade surfaces by pilasters. Nowhere is expressed the ordinary utility!

Note 242. From Gauthier.

454. Exchanges.

To these storehouses are added the exchanges and market halls, where produce and wares are sold and were brought for retail traffic.

As the finest example of an exchange may be mentioned that built by Alessi in Genoa, which was commenced in 1570 and completed in 1596. According to the plan in Fig. 627, a room in a single aisle, which received light on three sides through arches and windows, only having a closed wall on one side. The exterior has dignified proportions, the beautiful details peculiar to Alessi and monolithic white marble columns; but the interior with its plane volute ceiling of wooden trunks with plastering on reeds has a tasteless effect (Fig. 157). The framework of the roof in round logs has been already described. The interior lacks all visible ties; therefore with the light and perforated substructure, everything is no longer plumb; yet this has already been so for 300 years!

455. Mints.

The small states, republics and also many larger cities had the right of coinage, stamped money, and frequently provided separate buildings for this work. Thus for example, the republic and city of Venice erected a special palace structure beside the old Library of S. Marco for the purpose, of earnest and simple appearance in a monumental style (Fig. 628).

456. Market Halls.

As an example of a market hall may well serve the so-called Mercato Nuovo in Florence, whose plan is given in Fig. 629.

628 Twenty sandstone columns support the ceiling composed of 12 vaults. The design acquires a firm support by 4 strong angle piers and 4 intermediate piers at the ends. The former are animated by niches, like the piers of the Uffizi porticos; like those they support modern statues of famous Florentines. The Hall is ^avery successful work of Bernardo Tasso; the bronze oar is an excellent imitation of the antique marble oar of Tacca in the Uffizi Gallery. A similar Hall for the same pur-

purpose is also in Pisa beside the Palace del Comune, is now called Loggia dei Banchi, and was built by Bernardo Buontalenti in 1605.

457. Loggias.

Buildings of a special kind for which the starting point was indeed given by the Loggia dei Lanzi in Florence, are the open vaulted loggias, that were common in the 15th century; therein on solemn occasions the guilds or certain families were accustomed to gather and receive visits.

The great model -- the Loggia dei Lanzi --, that in spite of its mediæval forms already shows the spirit of the coming Renaissance, was originally intended as a Loggia dei Signori and as the scene of solemn acts before the people, and it only later became the place for the German mercenaries employed by the Grand Duke Cosimo I. The building was decided on in 1556 after the designs of Orcagna, but was only built in 1576, when Benci di Cione and Simone di Francesco Talenti are mentioned as builders. Besides this, Florence possessed in 1478 more than 20 such loggias -- here for families.

In Siena after the Loggia dei Lanzi in 1417 was built with out a single arch the Loggia di Papa, the Loggia still half Gothic in its lower part at the Casino de' Nobili, seat of the commerce court, intended for the Piccolomini family in spite of its dedicatory inscription. This appears as a vaulted arched hall on Corinthian columns with plain archivolt members, transverse segmental arches, plain and tasteless superstructure above the arch, with a single line of half effaced dedicatory inscription, a work of Antonio Federighi.²⁴³

Note 243. A drawing of the Loggia del Papa is found in von Geymüller, Pl. 2. -- In Müntz' *La Renaissance en France et en Italie*, Paris, 1885, p. 305, the Loggia at Casino de' Nobili is given as Loggia del Papa and as built by Federighi -- a rather great mistake for the actual Papal Loggia!

Still further may be mentioned, even if not entirely belonging here, the Loggia del Grano in Florence built by Giulio Parigi in 1619, and that recalling the works of Brunellesco, the Loggia di S. Paolo located on Place S. Maria Novella,²⁴⁴ with its geometrical stucco drawings and terra cotta medallions, its superstructure and widely projecting rafter cornice; then in Monte S. Savino the Loggia del Mercato built by

Antonio da Sangallo the Elder, a hall with 5 arches and architrave blocks over the Corinthian capitals, with a crowning main dentil cornice, and the attic above this furnished with horizontal windows having rounded sides. ²⁴⁵

Note 244. See von Seymüller, Pl. 21.

Note 245. See the same, Pl. 18 c.

1. State Workshops, Docks, Magazines, Arsenals, Inns and Baths.

458. State Workshops.

For the preparation of war materials were founded special workshops in Italy already in the 12th century, that indeed were all more or less utility structures, and from which the Renaissance period also did not depart. But for storing this material were required strong and durable buildings, just as judged necessary in antique times as well.

Designs, that can still afford to us conclusions on the execution of such problems from the time of the Renaissance, must be those in Venice, which from 1104 until today have not yet ceased, and which were especially extended from the 14th to the 19th centuries. The arsenal and administration buildings, furnished with towers and walls crowned by battlements, enclosed 16,000 workmen in the best period of the Renaissance.

Walls and towers of dark red arise, trimmed with white limestone; to the domain enclosed by them leads the beautiful portal of white marble (1460), crowned by the arms of the republic, and which is preceded by a small Place, decorated by marble statues and surrounded by metal grilles (Fig. 630). The four famous lions, brought from Piræus in 1687, are placed at right and left of the portal as mighty evidences of the victories of the republic; at the same time they recall the fatal destruction of the Parthenon, the greatest work of Hellenic architecture. ²⁴⁶

Note 246. We shall not forget here, that the second half of the 18th century became fatal to those most important structures of all times; to the pantheon by robbery and the addition of the so-called ears of Bernini (what barbarians never did, that did the Borberini), to the Parthenon, blown into the air by a bomb from an Oldenburg battery, and to the Castle of Heidelberg, that the France under Meloc deprived of its fortifications and roofs -- the chief representatives of Gre-

Grecian, Roman and of German-Italian Renaissance art, children of the same mother!

Another example in Venice, perhaps more interesting in its way, since it fulfils another purpose besides that of a covered entrance portal, for showing the actual direction of the wind, is the entrance to the Dogana di Mare. On the roof of the substructure like a tower rises a bold pedestal, that receives kneeling atlantes bearing a gilded sphere, on which stands a small rotating nude female figure, holding in its hands a stretched sail as a wind vane, as the most monumental and beautiful motive of a weather vane. Notable is also the transformation of the antique Doric frieze (Fig. 631). The original structure was erected in 1682 after the drawings of G. Benoni, "noble and ably," as the illustration shows.

459. Inns and Places for Enjoyment.

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691 In regard to inns and places for enjoyment, we can only refer to the written evidences given by Burckhardt, since we are unable to add anything tangible. Pope Nicholas V (1447-1455) must have erected at the Baths of Viterbo hospitals with princely equipment, great beauty and convenience. Certain inns and taverns have received enthusiastic mention; the most beautiful and largest inn before Gate S. Gallo at Florence, much frequented by artisans on festival days, was destroyed in 1529 by war. Buildings for the purpose of pleasure of the people were chiefly temporary structures, as still today.

692 On the appearance of the bath structures of Viterbo, nothing further is stated, and we have no tangible evidence of those at other places. The recently preceding centuries offered indeed little or nothing of importance; the swimming pool in the open air and the plunge bath in wooden tanks or basins of masonry. Sweat baths -- not air and steam baths -- again came into use in the 13th century, and in the middle ages was added thereto the preference for mineral baths.

460. Public Bathrooms.

Public bathrooms in the 14th century are everywhere mentioned in the larger cities on this side of the Alps, and according to this, the existence of similar arrangements can also be presumed in Italy.

Their arrangement consisted of dressing and bathing rooms. At the health resort in Baden in Switzerland in 1417 are men-

mentioned inns, some of which had special arrangements for bathing with great pools. In the 15th century baths in cities again disappeared. If it is then stated that Italy, France and Germany had splendidly equipped bathtubs, then these statements scarcely relate to public establishments in the sense of the Roman Imperial Baths, or of the modern cellular and covered swimming pools with the addition of sweating baths, and what Filarete says on baths in his Treatise is brief:--
 "The bath house is arranged as follows. One first enters an anteroom with benches, adjoined by a sweat bath, as well as four bathtubs, in which one obtains hot and cold water as required. On the court enclosed by porticos lie the rooms with the heating apparatus and water reservoirs, from which pipes lead into the baths; further is a fountain and the division for women, which is arranged similarly to that for men. In the upper story is found the business office for conducting the business of the society."

We have evidence that bathing arrangements were not lacking in the dwellings of the great. I recall here the colored representation of the bath of Cardinal Biolina in the Vatican, painted by Raphael (See L. Gruner, Specimens of Ornamental Art, 1850), and a beautiful bathroom in Palace Pitti in Florence belonging to a somewhat later period, further House della Grotta in Mantua, the loveliest casino with enclosed garden, a portico, anteroom, and a grotto with cool water.

Reminiscences on German soil are presented by the baths in House Fugger in Augsburg, the little so-called bath pavilion in the Nymphenberg garden near Munich, the marble Bath in Cassel, the charming bath pavilion in the Palace garden at Schwetzingen, and other places.

k. Public Fountains.

461. Public Fountains.

Scarcely another country of Europe than Italy, provides such an abundance of good drinking water, that the cultured men of the Old World utilized for their purposes, and no city of the world has such quantities of also good ornamental waters as the eternal Rome. Already the old imperial city took pleasure in the design of waterworks and monumental fountains of all kinds (meta sudans, etc.); but the Rome of the Popes was scarcely inferior in this respect. No public Place, no

villa, no court nor small garden are to be found in or around Rome without the element of water in more or less artistic treatment. And where nature does not refuse (for example in Venice, where only cistern water is to be had; but for this beautiful cistern openings are to be noted), no city and no village remains behind, and especially none of those costly country seats, which without the animation of the jetting water, basins and cascades, would not lack its magical charm.

462. Isolated Fountains.

The fountains occur almost entirely as art works of high rank, and are either formed as detached fountains with a great collecting basin, or consist of several of these arranged successively above each other, conceived as purely architectural and decorated accordingly, or the structure is elevated on a higher base with the aid of figure ornament. The figures consist of allegorical male, female, youthful and children's forms, of sea animals, of frequently fanciful kinds and shapes (dragons, seahorses, dolphins and the like, tritons, nymphs sea-maidens with bodies of fishes, these occurring either only as an addition to the architecture, or they form the principal part of the work, and the architecture being merely its enclosure. Bronze, marble, granite and other kinds of stone, either separately or combined, are the materials composing the fountains.

463. Fountains treated as purely architectural.

As perfectly beautiful examples of pure architectural treatment may pass the two fountains 46 ft. high on Place St. Peter in Rome (Fig. 632) with their strikingly arranged and effective handling of the water, one of which was designed by Maderna. The "heaped mushroom" that first receives the falling water guides it not much beyond the bowl projecting beyond itself, that rests on a strongly constructed support, while its water and that falling from the lofty jet are received in a great collecting basin, whose bold enclosure lies on the adjoining pavement of the street. The mighty Place with its massive architecture here settled the fountain question in no wise, other than with entirely architectural means.

464. Fountains with Statues.

A small public Place, like that of the Signoria in Florence, must employ other means, and accept the aid of sculpture; the

694 maker of the one there, named after him the "Ammanati Fountain", did this in such a rich manner, that in this example the combination with architecture is almost rejected. Other conditions, different modes of expression; with this principle the Renaissance always understood how to satisfy itself with good fortune and skill!

465. Ammanati Fountain.

The great marble basin, rising moderately above the pavement of the street, as on the Place S. Peter, forms the only important architectural portion, at its centre rising the great Neptune (Il Biancone) of white marble, drawn by a team of sea-horses, while on the other margin of the basin are arranged four sea deities of bronze, each accompanied by two tritons (school of Giovanni di Bologna, 1575; Fig. 633). In contrast to the Roman fountains, the water is very scanty and never plays, with regard to the preservation of the marble statues.

A still richer part is played by the stairway element at the great fountain designs in Messina and Palermo entirely constructed of white marble, which are exhibited on the Place near the Cathedral and on the small Place before the Palace of the Senators. Montorsoli was the artist of the Mountain in Messina (1547-1551), 26.3 ft. in height; two Florentines, Camilliani and Vagnerino, created that in Palermo (1550), which was originally intended for the garden of a villa. (Figs. 634, 635).

466. Tartarugne Fountain.

697 Modest in contrast to this massing of figures, but charming in effect, must be termed the so-called Tartarugne Fountain in Rome (Fig. 636), somewhat concealed on a small Place, a work of Taddeo Landini (1582). Four nude youths in bronze each raise a tortoise above the edge of a bowl supported by a great baluster, standing on the heads of dolphins, that again spout jets of water into shells placed before them.

467. Triton Fountains.

696 Gregory XIII again had erected a larger composition, yet too small for the magnitude of the Place, after the drawings of Giacomo della Porta; it consists of two concentric basins with four water-throwing tritons, masks and a fifth colossal triton riding on a dolphin spouting water, holding aloft by the

tail. With better effect on the same Place Navona is the more picturesquely conceived Obelisk Fountain, that Innocent X had erected in red granite by Bernini. The obelisk stands on a high and hollowed mass, on whose projections sit four colossal figures representing the rivers (Ganges, Danube, Nile and La Plata) executed in white marble. The Nile veils its head, so that it must not always look upon the church facade of S. Agnes, built by his rival, Borromini. The jest and revenge of an artist! But entirely skillful and thrilling as a composition. (Fig. 637).

More simply than on Place Navona has Bernini solved his problem at the Triton Fountain, where four dolphins bear a shell, from which rises a blowing triton -- a piece of original fancy, conceived rather as industrial art than as monumental.²⁴⁷

Note 247. See Petrouilly. Vol. 3. Pl. 2486

468. Neptune Fountain in Bologna.

As one of the most effective works in this domain indeed it must be termed the Neptune Fountain in Bologna, a magnificent work of the late Renaissance, where architecture and sculpture contend for the palm (Fig. 638); the former is attributed to Tommaso Laurati of Palermo, the Neptune 8.2 ft. high and of bronze with the cupids, to Giovanni da Bologna (1564-1566).

To give an estimate of all the small and great undertakings of the kind would lead too far, especially if the fountains in the villa designs were yet included, for example in the B Boboli gardens in Florence, in Poggio a Cajana, in Petraja near Florence, in Villa Borghese in Rome, in Naples and many other places, the fountains in the cloisters and their gardens, together with draw wells, like that between court and garden of the Jesuit Church at Rome, in the cloister courts of Monte Cassino and of S. Spirito at Rome, and a hundred other places.

Two small fountains shown may yet be considered, the pretty arrangement beneath the stairway in the passage to the court in Palace Vecchio at Florence (Fig. 639), and on the stairway to the Capitol in Rome, but which is no longer active as sketched by me in 1866 (Fig. 640). A later time has condemned the two Egyptian lions to inactivity, and has removed the use for water.

469. Architectural Wall Fountains.

469. Architectural Wall Fountains.

Instead of detached fountains great showpieces appear as a attached to walls of houses, treated after the manner of the antique triumphal arches. The entire architectural structure is there repeated at a great scale; but it experiences an enrichment in having the middle opening and the side passages treated as niches with complete statues, as shown on the Aqua Felice on Place Termini, built by Domenico Fontana in 1587 and under Sixtus V. in a scarcely happy manner.

470. Fountain of Trevi.

But more beautifully shown in the formerly esteemed Fountain of Trevi (Fig. 641).²⁴⁸ The grand ornamental structure rises on an artificially cut travertine rock, over which the water falls like a small cascade into the great collecting basin -- a view in moonlight summer nights, that leaves behind an unfading impression and a magical remembrance.

With the use of a drawing of Bernini was the work commenced in 1735 by Niccolò Salvi, but only completed in 1762.

471. Fountain Paola.

Conceived as an open loggia is the allied structure at the acqua Paola, supplying the greatest abundance of water, which was erected in 1612 by Giovanni Fontana under Paul V. Above the outlets of the stream of water into a collecting basin a almost 92 ft. wide rises a triple arched loggia between two angle pavilions, which is crowned by a great attic adorned by hermes, and bearing a massive inscription tablet with added shield of arms. The ground plan is given in Fig. 642.

As an isolated fountain on a larger public Place, whose entire design is made mediaeval must still be made prominent to the Fountain of Vignola on account of its beautiful proportions and its simple details. In the stepped base are inserted large drinking places with little channels for water; above rises a great collecting basin and over this is a second smaller circular bowl on a compressed candelabra-like support, beset by lions' heads, from which again rises a smaller bowl with jets. (Fig. 643). A skilful architect has here executed a perfect work with small means. He scorned the accessories, with which a Florentine master was extremely lavish. (Fig. 644). The programme was indeed the same for both; to construct the design of a fountain with basins on an open Place. Comparison

of the two solutions certainly gives the answer to the question, who has chosen the better part here. Finally is also the example of an isolated fountain in a court, that owes its basal idea to an Early Christian baptistery in Rome. (See S. Agnese and S. Giovanni in Rome, as well as S. Maria Maggiore near Nocera in Calabria and others). Eight marble columns support an octagonal marble entablature and enclose an octagonal area, at the centre of which rises a fountain with bowls, erected in the Penitentiario near Viterbo (Fig. 645). Likewise one of ancient models, that has not yet lost its attraction, and celebrated its origin on occasion by the sound of bells.

1. Monuments.

472. Equestrian Statues.

The exhibition of public monuments in the form of pedestri- and equestrian statues, executed in hard stone or in metal, antiquity and especially the late Roman imperial period made use of. Equestrian Statue of Gattamelata in Padua.

The custom was renewed in the 15th century, and it was the great master Donatello, who since antiquity in Italy again executed the first colossal equestrian statue of bronze in honor of the commander of the army of Venice, Gattamelata in Padua (1438-1441). Casting in bronze was completed in 1453, and it stands on an architecturally simple base of stone, ornamented by flat figure reliefs. (Fig. 646).

474. Equestrian Statue of Colleoni in Venice.

A second monument was erected some years later by the same republic of Venice, honoring its general Bartolommeo Colleoni (died 1475), which Andrea Verrocchio (died 1488) modeled, and that was cast after his death by Alessandro Leopardi, by whom was also the high marble pedestal (1480-1495). Burckhardt terms it the grandest equestrian monument of the world; "Horse and rider never again were conceived in one gust, so individually and powerfully executed as here". (Fig. 647). And the decision rendered in the year 1860 has also for myself at least in the year 1913 always its weight in the face of the erroneous productions of equestrian statues. The statue was formerly entirely gilded, after the practice in the antique period, vestiges of which are visible today on the belly of the horse and on protected places of the armor. Was its effect

and more beautiful in the gleam of gold? The question may be answered differently according to the taste of the period.

Whether Verrocchio would have allowed the pedestal in the conception of Leopardi as rather a work of art industry, must be doubted (Fig. 648).

475. Equestrian Statues of Ferdinand I and of Cosimo I in Florence.

These magnificent works were followed by two equestrian statues by Giovanni da Bologna, that of the Grand Duke Ferdinand I on Place della S. Annunziata, which was entirely completed in the year 1608, and is designated as the last, though not the best work of the artist. The other is located on Place della Signoria in Florence and represents Cosimo I (1594), and by many is termed a remarkable work. It stands on a marble pedestal, that is adorned by bronze cartouches.

476. Characteristics of the Equestrian Statues.

Rest and motion for horse and rider are the elements, which come into consideration in the composition of equestrian statues, and then also the fact, whether they should be executed in relief or as detached figures. Both kinds were in use at all times and among all cultured nations. Absolute repose and wild movement form the limits, whose middle stage is:-- the horse with slow movement forward, a slight movement of the rider's hand, but where the horse must not have the character of a draft animal. There are shown horses standing quietly on all four feet, mostly quiet animals in Greek and Roman art, which are held in repose by the bridle and the rider., (Parthenon); in the art of the middle ages and of the early Renaissance, these standing animals bear a vigorous rider, sitting upright in the saddle with outstretched legs (Verona and Milan), galloping and rearing in processions, hunting and battle scenes (Parthenon frieze, sarcophagus of Alexander), sepulchral monuments (Tomb of Dexileos at Athens), and on memorial columns of late Roman art, with heroic movement of the rider. The slowly walking horse with quiet rider remains the favorite motive for the equestrian statues of Roman and Renaissance art. The mode of its pose was made dependent on its size and its pedestal, and what was further considered was the mode of advance of the horse, the position of the ears (the ears forward or backward toward the rider), the trimming

of the tail and mane of the animal (cut short, natural growth, braided ends, and the like). For quietly standing horses, the natural positions of the fore and hind legs were also retained in the sculptured representation. Standing compactly or loosely, kneeling and the like were avoided as offenses against sound nature and good taste.

477. Mode of Advance.

A greater part with the moving horse was played by the mode of progress, and connected therewith -- a purely technical question -- was the distribution of the overlying masses of bronze or dense stone on three or four supports. This must be weighed and solved, which was more or less successful, according to the skill of the artist and of the bronze founder.

With the assumption of three points of support, the art work was more free and animated, as Verrocchio has shown on his equestrian Statue of Colleoni, while Donatello sought and obtained a fourth point of support by placing a cannon ball under the raised foreleg of the horse.

In the advance of the horse we distinguish between natural and artificial, regular and defective. To the natural belong the step and the gallop, when the "step" is adapted as the slowest and safest advance, when one hears four hoof beats, the two extremities on the same side are moved forward, while the diagonal legs support." (Fig. 649; step). But besides this also is to be noted the pace, where both legs on the same side are raised, and the centre of gravity is moved alternately to right and left, in a sense swinging. It is found as a natural movement in many horses of the steppes, but is also taught. (See Meyer's Great Conversations Lexikon. 6th edition. Pferd. IV. Gangarten, Fig. 1, Fig. 1, schnitt, Fig. 2, passgang, also Fig. 649). Therefore the horse can be assumed to be a pacer or as diagonally moving, since both are natural, a matter of custom or training. On the great Parthenonian frieze of the external cell wall of the Parthenon, the horses of the riders are sometimes pacers or steppers (Fig. 650 shows the former). The famous stepping bronze horse, taken from a quadriga of the late antique (see W. Rolfe's *Berühmte Kunststätten*, No. 29, Neapel I) appears as a diagonal stepper; the same peculiarity is possessed by the horse of the Marcus Aurelius in Rome (Fig. 651). According to a sketch

by Leonardo da Vinci of his horse is also represented likewise, (Book of Painting, Vienna, 1882, Vol. 1, p. 280), while his countrymen Verrocchio and Donatello have executed horses as pacers in their great equestrian statues in Venice and Padua. (Fig. 652 a). The Athenian riding horses have bristling manes trimmed short, that of Colleoni has a hanging and artistically arranged mane with ears turned backward. It trusted its rider just as little as the men traveling with the rider.

Note 249. It is interesting, that in the Italian examples mentioned, the greatest projections of horse and rider do not exceed the circumference of a circumscribed circle (Figs. 652 a, b).

Likewise the Byzantine bronze and originally gilded horses on the facade of the Church S. Marco in Venice, which formerly Doge Dandolo brought away from Constantinople (1201) as tokens of victory, that originally were portions of a quadriga on the Triumphal Arch of Nero, then taken to Paris by Napoleon Buonaparte in 1797, and the Emperor Francis I returned to Venice in 1815, are diagonal steppers. (See Fig. 650 a after the great drawing by Camille Boito in the magnificent work; La Basilica di S. Marco. Venice. 1888. Photogravure 232. They belong with the best, that antique Roman bronze sculpture has produced. The beautiful bronze equestrian statue of Nono B Balbo in Pompeii exhibits the horse as a diagonal stepper. (See Fig. 816 in Durm's "Baukunst der Römer. 2nd edition. Part II. Vol. 2 of this Handbook").

An equestrian monument of the first rank on Italian soil, within the bounds of Antique and of Renaissance art, was created by united Italy for its great King Victor Emanuel in eternal Rome, that cannot and should not be passed over in this place. In the vicinity of the Roman Forum and the Forum of Trajan, on the longitudinal axis of the Corso and terminating it, rises a colossal structure of dense limestone with a mighty arrangement of steps and on a high terrace; the gilded bronze equestrian statue on a pedestal of white stone adorned by richly significant sculptures, for which a slightly curved exedra supported by 16 columns, with temple-like porticos and columns of victory, serves as a background, and whose pylons will yet bear gilded quadrigas with goddesses of victory. (See plan and view of the entire colossal work, as well as t

the partial view photographed by Moscioni in Figs. 653, 654, 655). The horse of the royal rider is a pacer after the models of Donatello and Verrocchio. Horse and rider are quiet and dignified in pose. The best stone in Italy was sought as the material, in order to ensure an eternal duration to the monument. 250

Note 250. By the best informed circles information was given to me, by the intervention of the architect Alfonso Rubbioni in Bologna, frequently mentioned here, by architects Pio Piccentini and Collemarini in Rome, that follows here with the expression of my best thanks. The stone with which the monument is constructed, is a dense limestone -- stone of Botticino and of Mazzono --, so called from the quarries of small villages near Brescia. Both kinds of stone are not visibly different in quality. The columns on which stand the goddesses of victory are monoliths of Porto Santo, a kind of stone from the quarries of Grosseto, which the ancient Romans employed under the name of Claudio. With this was constructed the enclosure of the walled up entrance doorway at the building of the Church S. Peter in Rome, which is usually opened in the jubilee year, whence the name of Porto Santo (sacred portal). The pavement of the great terrace is executed in white and grey stones in different designs. The white is throughout the Botticino or the Mazzono, the grey is named after its quarry at Tobolo (near Brescia), and is equally as good as the Botticino. The floors in the resting places of the propyleas and of the great portico are of variegated sorts of marble, in great part of African marble, Egyptian granite, serpentine, verde antique, porphyry, pavonazetto, yellow antique, etc. Among the columns for the victories are also some of modern Pavonazetto from Carrara.

707 The creator of the monument is Count Giuseppe Sacconi, to whom, like the architect of the Gallery Victor Emanuel in Milan, fate did not permit life until the completion of his work. According to the official statement, the amount assigned for the structure was 37 million lire (\$7,400,000; the authorized sum), of which 30 millions (\$6,000,000 have been expended. (See Monumenti d'Italia. No. 13. Roma. Frank & Co.).

An abundance of historical memorials press upon the observer here. What a view of the works of long past times are op-

opened to us from the pylons and the great portico! At the rear are the ruins of the Roman Forum, on the right rises the Tower of Nero and the Column of Trajan above the roofs of the palaces of the city and the domes of Christian churches, in the middle being the greatest monumental domed structure of the world, S. Peter, and on the left appears the Statue of Garibaldi on the Janiculum! The mighty architectural view, animated by a festive and harmonious multitude of men, who appear to be elevated by pride and self-confidence, and wonderingly gaze on the work. Italy will make itself -- and has made itself!

Thirty million lire have been spent already, and yet all is not complete, but it is question of time, it will be so. Whoever will learn the contents of the mightiest monument of modern time, must pass through its plan and add in spirit whatever is incomplete. Only then will he be filled and overpowered by the grandeur of the cast, and the Italian people are grateful for the offering, which they have made not only to the national honor, but also to their national art, the revived and undying Renaissance. (See the general view, Fig. 654).

478. Pedestal.

The position of the equestrian statue on a disproportionately high pedestal, which is common to the two monuments of Colleoni and of Gattamelata, may be dangerous to the effect of the work in general. One looks too much from below, especially as the Place for its exhibition is limited, as for example in Venice, where men desired to lessen the difficulty by bringing forward the church facade near it at one side. Perhaps also another reason contributed; men at church festivals would not also build on the small Place. The near wall of the church is not the best accessory. I do not believe that artistic reasons were determinative here, as so frequently assumed.

Michelangelo was more careful and fond of correct proportion for the placing, the form and height of his pedestal for the antique equestrian statue of Marcus Aurelius. Thus one may wonder at the group as a whole, and the belly of the horse does not play the chief part there. In the form treatment of the pedestal, the great Florentine found the correct ideas, in contrast to that of Colleoni, too much conceived as a work

of the art industries. Donatello came nearer with his simple and severe architecture of the pedestal in Padua.

479. Statues in Relief.

The question of the pedestal vanishes as soon as recourse was had to representations in relief, as may still be seen after the mediaeval model in Milan, at the equestrian statue of the Podestà Oldrado da Tresseno on Place della Ragione, on the portion of the wall surface between the arcades and the row of windows of the second story. (See *Italia Artistica*. Milano. I. No. 35, p. 37). The mediaeval horse is here a pacer. (Before 1238).

480. Placing the Monumental Figure within a Niche or a Shrine.

A beautiful realization of this motive from the time of the early Renaissance is the Monument of S. Victor on horseback in armor and with a waving standard, on the tower of the Basilica of the saint in Locarno. (Fig. 656; see R. Rann, *Kunst und Wanderstudien in Switzerland*. Zürich 1888).

On mediaeval grounds is also based the Tomb of Barnabo Visconti, conceived as an equestrian statue (Fig. 657 from *Italia Artistica*, No. 25), in elevation recalling that of the Scalliger in Verona. On a sarcophagus supported by columns and piers like Corinthian, richly adorned by representations in relief, rises the equestrian statue of Visconti, sitting strongly and stiffly in the saddle on a quietly standing horse, with legs extending straight out, but without a helmet. Supporting the body of the horse stand two female figures, representing justice and courage, recalling the virtues of the prince. Portions of the monument were gilded. The design and execution is attributed to the Campionesse Bonino. (See *Italia Artistica*. Milano. I. p. 72, 73). Another is in the Colleoni Chapel at Bergamo, and a counterpart in worldly fame is in the theatre hall of the Palace at Parma.

The representations of figures on the bases of monuments mentioned are limited to reliefs; as larger additions they express themselves on the interesting marble statue of the Grand Duke Ferdinand I in Livorno, where four chained moors, cast in bronze, are attached to the pedestal as most expressive sculptured ornamentation of the substructure, which in this form represents more intimate relations between it and

the statue. It is a work of Giovanni dell' Opera, whose principal figure is far excelled by the four Turkish slaves (the four Moors) of Pietro Tacca. (Fig. 658).

Everywhere that in the treatment of the pedestal a monumental simplicity is given preference over a more art-industrial development, the problem is solved in a higher artistic way, and results in being permanently beautiful.

481. Standing and Seated Isolated Figures.

The sketch of Montegna for a statue of Virgil (now in Museum of the Louvre), on a low pedestal animated by two cupids, must perhaps be the oldest project in the Renaissance period for an isolated standing figure. As an example for a seated figure is to be named the Monument, chiseled from white marble, of Giovanni delle Bande Nere (died 1526) on Place S. Lorenzo in Florence, executed by Baccio Bandinelli (Fig. 659), on a broad and richly subdivided marble pedestal, imitating the architecture of Leopardi on the Collesoni Monument in Venice.

As a further example of the monument with a seated figure in a protecting shrine, richly treated architecturally, is the charming Pliny monument of Tomaso Rodari on the noble facade of the Cathedral of Como. (Fig. 660). ²⁵¹

Note 251. From *Zeitschrift für Bildende Künste*.

482. Antique Obelisk as Decoration of a Place.

With another monumental ornament of a place, the Roman Popes busied themselves by erecting again the ancient Egyptian obelisks.

The Place S. Peter, the Places at the Lateran, at S. Maggiore, etc., are thus furnished with such. On Place del Popolo and on Place Navona tower into the air these memorials of the victory of ancient Rome over Egypt, now tokens of the victory of Christianity over Paganism, now crowned by bronze crosses. The largest of these, before the Lateran, taken from Egyptian Thebes, was once erected in the Circus maximus. Wrought in red granite, it is indeed the largest monolith of the world with its 115.8 ft. It lay there broken in three pieces (Fig. 661), and there was also necessary besides its re-erection, also joining it into a whole. Domenico Fontana, who so successfully carried out the setting of an obelisk on Place S. Peter, was likewise entrusted by Sixtus V with this purely technical problem, which he solved with equal skill and success

in August, 1588. The obelisk has sides 9.55 ft. long at the base and 5.94 ft. at top, and corresponding to this mass was a foundation 11.54 ft. square was placed at a depth of 27.8 ft., entirely laid with travertine ashlars. The three pieces were connected together ingeniously by dowels in form of double dovetails. The bearing surfaces were first accurately dressed, then the grooves for the dovetails were cut in form of a cross, and this was itself made of four pieces and was inserted with lead jointing (Fig. 662). The total height of the work from the ground to the apex amounts to 163.72 ft., and its weight is 541.73 tons.

483. Obelisks of the Renaissance.

The Place S. Maria Novella was arranged on the former Circus (1563), and was further decorated by two marble obelisks from the time of 1608, resting on a pedestal with bronze crabs, and ornamented by the lilies of Florence at the apex.

484. Antique Spiral Columns.

Of the effective means of expression for personifying the great deeds of a monarch, preferred by the antique Roman in the imperial period, the spiral column with a statue of the ruler, the Renaissance made no use. The petty rulers could not justify the idea, and the republics recognized nothing to begin with.

485. Triumphal Arches.

It was similar with triumphal arches. The sole architecturally grand conception of this kind was erected by Alfonso I of Arragon in Naples, and decorated by sculptures (see Fig. 13 and Fig. 663 after its restoration); the Triumphal Arch of Scaletta in Vicenza opens the way from the station toward Monte Berico, and bears above the main cornice the stone statue of the lion of Venice, right and left of which are represented two standing saints. Its title is displaced, its form expression and its proportions suggest Palladio as the designing architect.

The Arch della Pace or Sempione was built for several million lire by Cagnola in 1806 in Milan, at the command of Napoleon I, and the Triumphal Arch on Place Saviour in Florence was erected in memory of the entry of Grand Duke Francis II. (1739). Both exhibit no new ideas whatever, and they adhere to the similar Roman models.

In the Cicerone of J. Burckhardt (5th edition, p. 303), the Florentine triumphal arch mentioned is termed a work meriting consideration, and is designated as Arch S. Gallo before the gate of the same name. Maria Theresa had it erected in honor of her consort, then grand Duke Francis.

486. Masts for Flags.

As a decoration of a Place may yet be mentioned flag masts, so far as they received an artistic form, as the case on Place S. Marco in Venice. Modeled by Alessandro Leopardi (1505), there rise from richly ornamented bronze pedestals the wooden masts painted red, with their waving streamers, thus forming a perfected art work (Fig. 664).

487. Columns for Statues.

Supporting columns to receive statues of certain saints (Maria columns), or as memorials of victory, also for receiving tokens of dignity and of possession, were frequently erected in the Renaissance period. The republic of Venice proceeded to place such on public places in all cities coming into its possession. On the Piazzetta near Palace Doge rose two columns of Syrian granite, certainly first erected in 1810, which support the bronze winged lion of S. Mark and the bronze statue of the ancient protecting patron of Venice, S. Theodore, standing on a crocodile. (1829).

From the Venetian period also date the two columns on the Place dei Signori in Vicenza, one of which bears the lion of S. Mark, as likewise the Corinthian column before the Loggia del Consiglio in Padua, which consists of a pedestal, a shaft of an antique column and a capital like Corinthian, that has also received the lion of S. Marco. On Place d'Erbe in Verona stands a marble column with the Venetian lion, from the date of 1524. The lion was renewed in 1886. Likewise Ravenna exhibits two Venetian columns on its Place. On Place S. Maria Maggiore in Rome, Pope Paul V. (1605-1621) had erected the marble column 46.9 ft. high taken from the Basilica of Maxentius, and adorned by the bronze figure of the Madonna. On place Tolomei in Siena stands an a column with Composite capital a wolf suckling a child.

In Naples is the column designed to receive S. Januarius (1631), another (column of S. Maria) was located on Place of the Trinity (1747), while S. Dominic had to be satisfied with

an obelisk as support (1657). Most are intermediate between obelisk and column, overloaded and without purpose, as said by W. Rolf in Vol. 2 of his good description of Naples (Bernharte Kunststätten, 1905). In Padua on Place Santo, men have been satisfied with simple crosses on columns.

The elevations of most of these columns consist of an octagonal stone base, a column shaft more or less decorated with a bell capital, on which rests a moulded cap with the statue. These forms recall the Gallo-roman columns of victory, that were often 39.4 to 45.9 ft. high, and originated in the time of 200 to 400 A. D., especially in the sequence of its parts and their form treatment. (See Durm, Baukunst der Römer. 2 nd edition. Part II, Vol. 2, p. 742 of this "Handbook").

m. City Gates and Bridges.

"Cojoling the gate invites savages within to the law;
Joyfully it leads the citizens out into free nature."

Schiller.

488. City Gates.

To mediaeval gates these words of Schiller cannot be termed properly applicable; for these occur as parts of the fortification of a city in defiant and lofty forms, as gloomy towers looking inward. Nothing inviting, nor attractive -- threatening to destroy whoever approaches with hostile intentions.

The external form of ^{of the gate or rather} the gate towers, charged with the introduction of muskets and of heavier artillery; the tower was omitted; the elevated parts vanished, and as broad based structural masses appears the gate of the Renaissance, adorned by pilasters and columns, it "cojolingly invites us within."

With this principle agrees the Gate S. Pietro in Perugia (1473), built by Agostino d'Aretano di Duccio, whose upper portion unfortunately remained unfinished (Fig. 665). In equally stunted proportions the famous fortification architect Michele Sanmicheli formed his city and fortress gates in north Italy and Dalmatia, as shown by the plan and section of Gate Navona in Verona in Figs. 666 and 667, and as the outer elevation of the beautiful Gate at Zara exhibits (Fig. 668). Not easily will such a characteristic form and treatment of details of such an earnest structure for utility be found, than is the case at the so-called Gate Stuppa in Verona and at the gate in Zara. The defensive capacity of the gateway is exter-

extensively examined, but in the course of the examination, the following facts were ascertained: that the above-named person is a native of the State of New York, and that he is now residing in the State of New York.

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externally somewhat marked in the antique gates; but the interior and the plan of Gate Nuova teach us otherwise and show, that we do not have to do with an object purely ornamental.

Serlio also takes the same course in his designs for gates for a fortified city (Fig. 669), when he adopts the rusticated order on the exterior; but he is not satisfied therewith, when he adds a firing bastion above the main cornice.

In Rome are to be mentioned existing examples; the Gate del Popolo (by Vignola in 1561, the interior built in 1655 by Bernini and enlarged in 1878), the Gate Pia, begun in 1564 after Michelangelo's design, as well as Gate S. Spirito commenced by Antonio da Sangallo the Younger, etc. ²⁵²

Note 252. See Petrouilly, p. 181 of text.

An innovation is shown by Gate Nuova in Palermo, built under Charles V. by the architect Gasparo Quercia (1584), whose substructure is like a Roman triumphal arch; over this is an intermediate story with medallions, above being a loggia with five arches arranged with a terrace, from which rises a high roof with colored glazed tiles, that bears a lantern (Fig. 6-A00. The upper part was destroyed by lightning, but was entirely restored in 1665.

720 489. Triumphal Gates and Arches.

Inserted between two massive defensive towers, appears the magnificent Gate of honor and triumph of Alfonso I of Arragon at the Castle Nuovo in Naples built in 1283, erected in the year 1442 in honor of his entrance into the city, a work of the Milanese architect Pietro da Martino. Further at the same place is the Gate Capuana, erected some decades later (1484) by Giulio da Majano; this is a gate building with high frieze and a high attic; "much the most beautiful gate of the Renaissance," was restored in 1535 and ornamented externally by reliefs by Giovanni da Nola.

As a detached structure in the sense of the antique triumphal arch may also be mentioned the City Gate at Padua. (Fig. 671, from Italia Artistica).

490. Bridges.

"Bridges of absolute architectural importance were first created by the time from 1540 to 1584." ²⁵³ But antique art wrought earlier in this, and without the splendid Bridge of

721 Augustus in Rimini and others, solutions in a purely classical

sense, such as Palladio left to us, would have scarcely been possible. He gives his best in the design for a bridge with three arches with vestibules and shops, reproduced in Figs. 672, 673 from his drawings. He accompanies it with the following words:-- ²⁵⁴ "In my opinion the design for this bridge is very beautiful. It is suitable for one of the most monumental cities of Italy; it must lie in the midst of the city, where the river is very wide; three streets must lead over it, that are bordered by shops and great traffic." In justification of his design, he calls up the evidence of the ancients, when he says that the Bridge Elia in Rome was covered by loggias, furnished with a bronze balustrade, and was decorated by statues and other ornaments. Covered bridges were also demanded in the 15th century by Alberti, who likewise must have built a roof over the Bridge S. Angelo at the command of Nicholas V.

Note 253. See Burckhardt, J. Geschichte der Renaissance in Italien. Stuttgart. 1878. p. 209.

Note 254. In his Book on Architecture. Book III. chapter XIII, p. 25.

In the gallery of the Palace at Parma is a painting (No. 288) of Fountain Mosetti (Section XVII), that gives an "ideal restoration of Castle S. Angelo and the Bridge," showing the bridge with five arches and with a portico structure, that bears a low dome at its centre; in its way a beautiful and interesting solution, such as Palladio may have conceived.

Another painting (No. 184) by Canaletto gives the Basilica in Vicenza, on the right of this being Bridge di Rialto after the design illustrated in Fig. 674, termed a "pleasing project".

As a bridge with shops, the Bridge di Rialto in Venice (Riveto alto, 1588-1592), built by Antonio da Ponte in the place of an old wooden bridge, is a tasteless work in comparison with the design of Palladio, which we must regard as intended for Venice, from the painting of Canaletto. The bridge is 157.2 ft. long, 72.2 ft. wide, and has a single arch of 88.6 ft. span with a rise of 24.6 ft.

By Antonio Cantino was built the Bridge of Signs in 1595-1605, which connects the Prison with Palace Doge, and is constructed as a covered bridge with good treatment of details.

Pressing himself from the antique, Ammanati erected the

Bridge della Trinita over the Arno in Florence, an engineering and artistic work of high value. "The forms of the arches are adapted with the freest genius to the upward inclination towards the middle," and with refined feeling for lines, instead of the hard form of the segmental arch the softer form of the oval arch is chosen for the arches.

Serlio says very little of his predecessors in bridge structures. In his Book III (p. 90) he gives drawings of four antique Roman bridges of stone:--

1. Three arches of Bridge Sisto.
2. The bridge Milvius = Molle.
3. The Bridge S. Angelo (Elia Adriano).
4. Bridge Fabricio.

And he gives the calm explanation therefor by "so that one may understand the manner in which the ancients built their bridges." Elsewhere we find also by him:-- "In Rome are many bridges erected by the ancient Romans." The bridges mentioned are illustrated by woodcuts, as good and bad as were then usual and possible.

The landscape and the interiors of cities were not injured by them. With this reference to doubtful illustrations without other text is curiosity satisfied. On bridges outside Rome or in other places in Italy, he gives no information.

Barbarians and Greeks were the instructors of the Romans in the domain of bridge construction; these gave instruction further to the technical guilds in the middle ages, and these again to the masters of the Renaissance.

Wood and stone were the first materials (iron set in lead only serving as cramps), as the oldest known stone bridges in Babylon teach us. On the appearance and construction of many Roman bridges, conclusions are afforded by representations on the column of Trajan and on coins. Fortified entrance gates (bridge heads) seem to have not been excluded in them.

491. Monumental Structures for Bridges.

But we further know, that the feeling of the Roman architects for style and beauty was also required monumental structures for these passages over rivers.

492. Bridges at Kiakta and Alcantara.

At Kiakta, two columns at both ends of the bridge indicated the entrances, and at Alcantara rose a plain gateway of stone,

spanned by a semicircular arch, with no other decoration than an inscription tablet on the pier in the middle of the stream; at the ^{493. Bridge at S. Chamas} Flavian Bridge at S. Chamas were erected two portals at the ends, included between two pylons subdivided by Corinthian pilasters, the gateway opening being spanned by a semicircular arch. On the main entablature stand lions carved in stone, like watchmen at the entrance (Fig. 536 in Durm's Baukunst der Etrusker und Römer. 2nd edition. Part II, Vol. 2 of this Handbook). The same material is employed for arched bridges and portals. The genuine Roman tendency also to monumental buildings, which must serve only one practical purpose, to gain some place for architectural expression, also led the masters of the Renaissance to the same procedure. It certainly was this, which inspired the master Palladio in his bridge designs with portico and temple facades. Mostly buildings for peace come into consideration, for friendly concerns of life, where at most one met others, and not isolated forts, which are reflected in the ideal projects and in the executed structures. Before the dilemma of being compelled to work with two chief structural materials, the architects of the Renaissance were not placed. Supporting piers on the land and in the stream were of bricks or stone, driveways supported by steel structures with vertical terminations by stone or masonry architecture, to be compelled to combine all this into an architectural work with unified effect, testified to good skill. Likewise for false knightly castles, or fortress gates as portals to bridge passages and similar jokes of theatrical art, they were spared. Only as natural defensive points, as for example were conceived and executed in its time in the city of Prague at the entrances to the Bridge and the Altstadt, can they be allowed to be of value, thus where they have meaning and justification. Heavy in the masses, but covered by the graceful filigree ornamentation of the later Gothic on the facade surfaces, they have the more expressive effect by the unity of the material -- of stone -- in bridge construction and their defensive tower.

494. Bridge Heads.

Serlio digresses to the so-called bridge portals in his Book VII "On some Gates of Cities and of Fortresses." The gate of a fortified city or for access to the castle with its draw-

drawbridge over the city or castle moat was indeed properly included in the domain of architectural works, but not the entrances to bridges in the open country. Here he abandoned the ancient Roman traditions, which also foresaw these. What he gives are the dimensions and numerical proportions for fortress gates, small towers and slits for elevating chains, clothed in the forms of the Tuscan or Doric style in combination with rusticated work, triglyphs or lions' heads in the frieze, with a bastion above the main entablature for artillery, over this being a small triangular tower with loopholes for muskets or for lookouts on the open country. These architectural structures were for offense and defense, of which men made free use at great connecting bridges as stated. The entrances to the bridge passage were open, and naturally were connected with the adjacent streets; stone bridges with stone parapets, interrupted by pedestals with stone statues on them, all in beautiful treatment and combination, like the Bridge of Ammannati mentioned in Florence -- indeed the most beautiful work of modern engineering art until the present hour; the Colleonni among bridges! The middle ages liked to add little chapels on a land or river pier (old Bridge over the Rhine in Basle), an idea likewise borrowed from antiquity, as shown by the little temple (cell with a clear width of 8.0 ft.) on the Bridge at Alcantara (see *Durm, Baukunst der Etrusker und Römer*, 2nd edition, Part II, Vol. 2 of this Handbook, Fig. 818, p. 544), which after its useful employment in the middle ages reappears in the chapel in the middle of ^{the} covered bridge (696.8 ft. long) over the Ticino near Pavia (Fig. 121), whose wooden roof rests on small piers of gray granite.

The Renaissance in Italy in general went out of its way to metal structures in a grand style, although known to it was the bronze framework of 93.4 ft. span with its rafters of channel section over the vestibule of the Pantheon in Rome, that was still standing in place in the 17th century. Likewise it remained in sympathy with iron as a structural or connecting material, by the mode of connection in antique temples, then by the window grilles and locksmiths' work on antique secular structures, and yet more by the ironwork in mediæval buildings. It took from thence without scruple the not always worthy of imitation, visible ties of vaults. Scarcely any o

church edifice and no palace court surrounded by porticos is free from this.

495. Iron as a material aiding Construction.

It also went about these things scientifically, as the works and experiments of Poleni in nooping the dome of S. Peter in Rome, and also although less assured, shown by the placing of iron rings about the dome of the Unilta at Ristoja. In the refined smith's work, for example in chapel enclosures, choir grilles, balcony railings, lanterns, banner holders and the like, it excelled all previous works. In spite of all this knowledge, preparation and the good training and skill in execution, the Renaissance remained skeptical concerning the use of iron as the structural material for grand structures. Had the former wooden log construction of its basilica roofs at Padua and Vicenza in segmental form been translated into iron, or had these been built with De L'Orme's timber girders (see Beynüller, *Baukunst der Renaissance in Frankreich*, Part II, Vol. 6, p. 345 of this Handbook), where De L'Orme wishes to cover a hall of 167.2 ft. span by his system, then perhaps the attempt would have succeeded in ensuring to iron the leadership as structural material for grand buildings, earlier than this occurred.

"It must not be, for it would have been too beautiful." But whether it would then have built its possible iron bridges on stone piers, and have placed before them vertical stone terminations, is a matter of itself, that can only be surmised. One must indeed best answer the question negatively.

496. Artistic Treatment of Steel Structures.

We worry ourselves today by the question of the "artistic treatment of steel structures, but forgetting therein, that this question is tolerably subordinate in modern bridge construction. And if one seeks the value of a great bridge structure in the stone substructure or a prefixed portal of stone or of steel, and does not know how to give these in the ground forms of construction, then he rather ceases to make projects, in what manner help can be found in our need, and he does not worry himself, whether a stone portal designed in the antique, Romanesque, Gothic, Renaissance or Rococo style deserves preference over others, when deep thinkers appearing here are unable to distinguish the style forms mentioned from each other.

other, and call upon Vitruvius, Carl Bötticher and other esthetic lights, and rejoice over the increasing participation "for artistic worth" on the part of the great intrusive multitude, celebrating this as a visible expression of our very propitious time. Poor present time! And if now finally the revelation is expressed, that it is not architecture and at most has become a branch of construction, not influenced by tradition, to approach nearer the aim, then must one indeed assume, that our new brothers in the colonies must be called as arbitrators in the dispute; at least they are not hampered by any technical traditions.

497. Artistic Selection of Style for Bridges and Portals.

It is further stated, that one can seldom find antique and Renaissance forms in the bridge portals, which however play a particularly important part in the general appearance of many great steel bridges. On the whole, the mediaeval style forms become the rule for such structures (?), which may be explained in that in the architecture of the 19th century, the historical tendency predominated, and the motive of a fortress tower appeared to have greater justification, since the so-called bridge heads were fortified works. Really to follow these statements further does not here pertain to the chosen attempts, but they must be touched upon.

Personally, I might agree with a "fully temperamental" of Professor Franz:--

"Away with the stone masks, away with falsehood."²⁵⁵ Every steel structure is to be so transformed as to exhibit no ugly side, and therefore no longer needs a covering by stone construction! Thus might I inspire myself more for the idea, that only the first stone piers in the stream can be architecturally and finely ornamented, not emphasizing a passage from one bank to the other, to which space-concealing surfaces in continuation are lacking, or are merely metal webs. In front are many dormers with no soldiers behind them!

Note 255. From W. Franz. Kann man die Ingenieurarbeiten schön gestalten? (Can engineering structures be made beautiful)? Berlin. 1910. Published by Reichsboten.

The frequently praised "relations between the steel work and the stone masses" everywhere exist so far, as one serves as a support for the other, and the more sensibly and skillfully t

this occurs, so much the better; but a harmony as for monumental buildings of one material will nevermore be obtained, even if the entrance portal on the traffic street be ever so "remarkable", and be treated with innate truth or external necessity. And if for a bridge the portal to nothing must play the leading part, then remains merely the monotonous trussed girder bridge, where the steel is kept flat, at most is possible an architectural connection between the stone portal and the steel structure, while a limitation of the bridge construction to itself and to the supporting substructure permits all forms, that can be tolerated in God's free nature. To me appears always more appropriate the bit of truth in the steel Bridge over the Garabit valley in France, the Kirchenfeld Bridge and the Kornhaus Bridge in Berne, than many of the notable and unfortunate transfer structures over the north Elbe in Hamburg, or the street Bridge over the Rhine at Worms, etc. No further explanation is necessary in order to judge as fully worthy artistic existing steel bridges, like the Alexander B Bridge in Paris with the massive abutment piers of Kiakta, or the Coblenz Bridge over the Rhine, without the very modest Stolzenfels Castle architecture. The great and massive structural forms, a happy course of lines thereon are effective in the view of the landscape and of the city; the riveted wrought or cast ornaments, or the freely invented plant growth with grotesques and the like (the ornaments attached) are accessory and express nothing, at most having some value on paper for the designer and his patron, but to its own injury.

All esthetic good advice gives many stones, but little bread.

Also excessive in this sense is the most recent publication on the "Artistic Treatment of Steel Structures", Berlin, 1913 wherein it is stated, that for a sound judgment of many executed examples, an autopsy of the same at the locality is required, if one will not be unjust, and I likewise hold as proper the knowledge of the origin and of the history of the construction of such works. Officials and means often enough teach the architect what he must or may build. At the portals of the Mannheim-Ludwigshafen Bridge over the Rhine, which may be regarded as imitations of the antique, for an example to the architect of the premiated design, the pylon structures of the pylons adorned by statues and sculptures were simply str-

stricken out with the frivolous remark, that these would be gladly built, if the architect would pay for them. "Sufficient for the wise! Under present conditions:-- to the engineer is bridge construction in its entire extent, to the architect and the sculptor is cooperation in the treatment of the piers and abutments without senseless terminations by entrance portals.

n. Cemeteries.

498. Cemeteries.

Cemeteries are not to be omitted as being public structures, according to the custom of utilizing as burial places churches, cloisters and courts. All great designs in Italy, at which we are amazed today, and which are erected in a grand style as communal structures, belong to the modern period. Thus was first opened in 1836 the beautiful Cemetery in Naples, that in Milan by Macciachino in 1866, another in Milan in 1895, that in Genoa planned by Resasco in 1867, and the one in Rome (Campo Verano) in 1837. The Cemeteries in Messina and Verona are likewise of recent and very late date, as well as the new Cemetery in Trient, but that in Palermo (Campo S. Orsola) was already built in 1782, the one in Bologna in the Certosa erected in 1335 became a general cemetery in 1801. The cemetery in Ferrara lies near the former Carthusian Monastery (built 1498-1553), and the republic of Venice arranged its cemetery on the burial island, which bears the oldest Renaissance Church of Venice, S. Michele, erected by More Lombardi (1466).

A separate cemetery is assigned to the Hospital of S. Spirito in Rome, whose plan is shown by Fig. 675. It lies directly next the hospital building, and only receives those dying therein. The graves are similar, and are regularly arranged, the enclosing walls being of simple architecture and decorated by paintings. The adjacent mortuary chapel is a small building. For this arrangement executed by the architect Fuga, the architect also conceived the mode of burial; the bodies are cast into pits closed by a covering stone, and are covered by caustic lime, that consumes them.

Section XXI. Plans of Cities, Public Places, their Location and Form within the City. Arrangement of the course of the streets.

"New plans of cities seldom occurred, but still engaged the thoughts of the most famous theorists."

J. Burchhardt. *Gesch. d. Renss. In It.*

"To the tyrant are hostile, both his followers and enemies. The plain is more appropriate for the free people, the mountain safer for the tyrant."

L. B. Alberti. *Book V.*

499. Introduction.

No land in Europe has had to consider in the past and future so much as Italy the architectural past and the arrangement of its cities. Greeks and Etruscans had already brought their highly developed culture into the land, already in permanent places, before Rome extended its mighty sway over the peninsula, and appeared as its ruler. Grecian construction with stone beams and Etruscan with arches became the basis of its architectural creations, and the treatment of the residences of the new rulers were connected therewith. Even if by the expulsion of the first settled peoples many open and fortified cities were blotted out from the earth, yet the practically inclined Roman people were so far conscious, that it would be economically preferable, to organize the conquered places and cities for themselves, so far as this might be possible. Rebuilding, transformation and extension were therefore the first problems of Roman city architecture, and from the arrangement of the permanent camps and military colonies resulted the second.

National Roman plans consequently were not the most numerous. From small barracks we see great fortified places and cities with industries proceed. Similar procedures occurred in the time of the migrations of nations, allied ones in the middle ages, and again similarly in the time of the beginning Renaissance, differently colored by advance and decadence in customs, mode of living, and not for the least part from changes in the use of weapons, the conduct of men, as well as the system of government.

The statement of J. Burchhardt, that to the men of the Renaissance period fell no great problems in building a city is

just as intelligible as true, and likewise applies to our time in Europe, particularly for the older civilized states therein. Indeed enlargements but no new foundations.

"Destroyers of cities" but no founders of cities; the name of municipal architecture is a pretension for this work, but does not accord with the meaning of the term.

500. Extensions and Additions.

The small transformation and preservation of ancient and inherited possessions and arrangements sounds like scorn.

Note. See the very noteworthy Essay in Zeitschrift "Maz", July 5, 1913. "Monk and Homes" by Hermann Gottschalk.

731 The rebuilding of Ostia after the destruction of the ancient city, the building of a castle there by ponticelli and G Giuliano da Sangallo (1483-1489), the beautifying of the originally little city of Consignano by some new buildings and its christening as the city of "Pienza" by Pope Pius II. The beautifully built and much praised Place of the little city of Urbino near Ancona by Pope Nicholas V (1451), the Place of Viterbo surrounded by porticos and the shops of the small citizens, with its lookout and clock tower, etc., are not to be termed the founding of new cities. Just as little is this the case "when in the 15th century important cities strove to make their crooked streets broad and straight, and satisfied themselves with the appointment of the so-called officials for improvement (just as with us) for carrying out the matter". In Bologna certain streets were laid out straight.

Also the breaking through for straight streets, for example as in Ferrara and Mantua, are not founding cities, but rather transformations within the city walls. When J. Burckhardt further says, that in spite of this the most famous theorists in architecture busied themselves with the problems of new cities, this for example was already done by a Filarete, but not that he found patrons for his ideas.

501. Filarete on laying-out Cities.

Filarete in his Treatise on Architecture (Book VIII) requires for his ideal city an absolutely level plain, which is fortified by 8 gate towers connected by walls, to which must correspond 16 streets extending radially to the centre of the city, the Place on which should rise a princely palace and a cathedral. (Fig. 676). The streets must be interrupted by a

alternately larger and smaller expansions in the form of square Places, where a theatre and a hospital are not to be forgotten. For the chief Place he desires the rectangular form in proportion of 1 : 2, i.e., a width of 293 ft. and a length of 586 ft., along the sides being carried canals 23.4 ft. wide with a portico 15.6 ft. wide and 23.4 ft. high. At the midst of the Place must a fountain rise, that must have 6 entrances. Around the Place are to be shops with cellars, so that each trade finds sufficient space for its practice. Between the portico and canal extends also a street 15.6 ft. wide, that must lie 2.92 ft. lower than the portico and the Place. At each entrance to the Place will be placed a bridge 11.7 or 15.6 ft. wide. The canal must be enclosed by a parapet 3.9 ft. high, with benches for sitting. - - Booths for butchers and fish dealers are to be placed directly over the water of the canal.

502. Place in Vigevano.

A regular form of the Place, canals, shops and promenades, in the midst of the Place being a fountain for ornament and use, were accordingly the first requirements, and with reference thereto is planned and built the Place at Vigevano, a work of Ludovico Moro, that was famous as "beautiful and ornamented." The rules of Filarete are followed, so far as circumstances permitted. Yet the fountain does not now stand at the middle, but is more suitably in the shade of the narrow fronts of the houses, and the princely Palace of the Sforza rises behind the dwellings and the shops of the Place, with its massive clock tower and the beautiful loggia of Bramante, proudly dominating the plan. (Fig. 677). The columns of the arcades are of gray granite, roughly and mechanically cut, & the architecture is orientally painted, the lofty tower on the contrary being constructed of dark red bricks, rising behind the business buildings with their tile roofs and numerous chimneys. Really a beautiful and ornamental view of a public Place of a small city.

The uniformly treated dwellings and arcades indeed have a rather tiresome effect, but the monotony is softened by the well divided tower of the Rocca. The design is by a single man in its entire extent, I might say was completed on the same day. No possessor of a house should or wished to excel

another, all were the same small people under the protection and suzerainty of their prince, and no later time has destroyed the unity. In Vissevano (near Milan) could be put up a dedication tablet: -- Filarete to his Duke, the certificate of acceptance gives the realization.

503. Place in Pienza.

In contrast to Vissevano, at the founding of the city of Pienza by Pope Pius II (1459-1462), the small Place was only surrounded by public buildings, the trade people being kept afar. Dignified and grand must be the effect of the nearest surroundings by the Cathedral, Palace Piccolomini, Vescovato, Palace Pubblico, and a private Palace, as the sole dominating architecture. (Fig. 678). Thus for Places of the second rank was sought a regular treatment.

As in antiquity, the shops on the market were established and rented by the State, the city government, or by rich private persons.

Since as already stated, new cities were seldom laid out in the Renaissance period, and the old ones must be satisfied by enlarged structures, then a uniform style construction of the buildings on the Place could not be counted on, even if one mighty in the profession, Michelangelo, advised carrying the architecture of the Loggia dei Lanzi in Florence around the Place di Signoria in its entire extent. With the massive form expression and dimensions, the good counsel may be understood, but the design changed into smallness would have lost all monumentality. How many such fail by false scale!

504. Unity of Style of Buildings around the chief Place.

Many Places also only in the course of time became symmetrical and polyform, since most alterations or extensions only were gradually completed according to increasing needs. According to the law, that fashion is stronger than reason, always according to the time in the rebuildings undertaken, the most diverse styles are expressed in the designs and rebuildings. Likewise the change in business life and in the mode of living in general, may have had its part in much confusion.

The new "Place" was mostly assigned to the location of the ancient forum, where formerly stood temples with porticos and basilicas of justice, now rose Christian churches, porticos, city halls and administration buildings, lofty lookout and

clock towers. Unity of style and of architectural composition vanished, and frequently gave place to greatly varied forms. Antique similarity disappeared, the structural design told its story.

For us such a varied series of buildings indicates a reveal in memories, a conjuration of old times and histories, an incitement to study and to comparison.

505. Market Place in Verona.

Such a varied view is given by the Place della Erbe and the adjacent Place dei Signori at Verona, as may scarcely be found elsewhere in Italy, at the same time being an example of a rectangular but not regular design of a Place. A rectangle can indeed be inserted in the market place, but it is not therefore rectangular. It has three entrances; on the surrounding buildings are represented all styles to the severe Barocco.

A church tower and a tower of the city wall 272.3 ft. high rise from the mass of buildings, together with fountains and memorial columns. A varied and animated life moves there during market hours, a multitude of cloth tent roofs on the tops of fir poles, protect the dealers and their wares from sunshine and rain (Fig. 679). -- Here is also the place where Verona's citizens once swung their weapons! On the contrary the Place Signoria (now Place Dante) is imposing by its buildings and the monument of the great poet.

Greater contrasts than these existing between the Place of Vigevano and that of Verona can scarcely be found again. To the architect of the school the former may be more pleasing, but to the jovial and cultured man, the latter with its traffic of an animated multitude of people.

Further Places "with square and rectangular" forms were those of S. Croce, S. Marco, Azeglio, Vittorio Emanuele, S. M. Novella and S. Annunziata, all in Florence, then that in Piacenza with its two equestrian statues, those in Reggio (Emilia), Guccio, Perugia, and as especially beautiful and distinguished by adjoining buildings in a grand style, that in Vicenza is to be mentioned.

506. Places of different Forms.

Of Places in trapezoidal form should be named Place Capitol in Rome (Fig. 680), and the Place before the Cathedral in Piacenza.

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L-shaped public Places are that before S. Petronio in Bologna, the Piazza and Piazzetto in Venice, and Place Signori in Florence.

Semicircular, oval and horseshoe shaped Places of great importance are the Place del Campo in Siena, from which 10 streets open radially, the oval Place del Popolo and the great Church Place before S. Peter with its porticos, fountains and the obelisk in Rome, and in the same city the entirely regular horseshoe-shaped terminating Place Navona (circo Agonale), as well as in Mantua the desolated Place Virgiliana.

507. Irregular Places.

Irregular, but interesting by their arrangement, are the Places dei Fretti, d'Erce, and of Unita Italia, with the adjacent great buildings of the Salone, University, Palace del Capitano with the clock tower and the Loggia del Consiglio at Padua (Fig. 681).

In the midst of the city of Udine, located at the foot of the castle hill, the Place Vittorio Emanuele is particularly distinguished by the extremely happy arrangement of its monumental buildings, with the Palace municipale, the great Portico with massive portal and clock tower on which stand two bronze figures to strike the hours, as in Venice. Not easily be offered elsewhere an architectural view of a similar nature. (Fig. 682).

As peculiarities must be designated the Campo of Ss. Giovanni e Paolo, and the Place near the Rialto in Venice. The Campo mentioned is not large, but by its buildings and the statuary ornamentation as well as its being bounded by the canal as a passage street, is distinguished as a creation of the first rank in artistic respects, while the other was originally conceived as a great place of assemblage. (Figs. 683, 684).

On the whole, the idea of the antique market place is retained in all the designs, but conformity, that prevailed in those in antiquity, is no longer found in the succeeding period.

Shops around the Place in a consistent way and grand style were properly arranged only at the Piazza in Venice, and have remained until today. The old magnificent Church of S. closes one end of the Place, at an angle of which rises the slender watch or bell tower (Campanile), with the magnificent Loggia

at its base; at the other side being the well known clock tower with its bronze bell strikers.

At the second end, which was formerly terminated by a church, there are now built shops with access or passages toward the Piazza. The form of the Place is a strongly expressed trapezium (Fig. 685), that does not result from optical but rather from practical reasons, with reference to the locality, just as the case for the Places in Pienza, at the Capitol, and at the Place before S. Peter between the entrance facade and the colonnades. (See the corresponding Fig. 680).

The parts of the Place indeed remain the same, but the form and the so-called united development are excluded; everywhere new life springs from the existing old one. The Renaissance has mostly taken charge of the formation here, and the sound sense of prince and people have then derived more good from the requirements, than all the theoretical lectures on this subject, i.e., on the arrangements of cities, so far as they refer to the artistic side. Yet here is again true the law, "that only the living are right." men must never lose faith in their own infallibility and imagination.

Where conceived in the Renaissance period, Places and their forms became extended and improved, larger and more suitably treated. More light and air were already then the solution, and the enlargement of a public Place for the benefit of worthy monumental structures was the endeavor and requirement. (See Michelangelo's advice to Cosimo I on the treatment of P. Place Signoria in Florence).

A climax of designs for public Places, a model for all times, will ever be and ever again remain the Place de' Signori in Vicenza, with its two columns from the Venetian period, and the Basilica with its widely open marble porticos of Palladio, the same motive employed in two stories over each other, opposite this being the Piazza del Capitano, dominated by the slender tower of red bricks 269 ft. high. A view of the peace and dignity in the first hour after noon. an animated one in the morning hours of the market day; visionary and noisy on festival days, under the setting sun placing us in consecrated harmony by its splendor of color (Figs. 686, 687).

A charming colored view is also given by the marketplace in Trient with its variegated painted house facades, the Romane-

Romanesque Cathedral with its heavy bell tower and its octagonal bulbous termination, the great Fountain of Neptune, richly adorned by statues, and its gushing waters. (Fig. 688).

After the great plans in the frequently mentioned work, "Le Fabbriche di Venezia" is drawn a plan (Fig. 684), whose accuracy and designation are not fully guaranteed, but which tolerably agrees in general with what is given by the well known smaller plans of the city, and comprises the buildings enclosing it, especially those of Isola di Rialto with the bridge over Canal Grande, the Palace dei Camerlenghi (built 1525), the Church S. Giovanni Elemosinario (1523) and S. Jacopo on the Place of the same name, the Fabbriche Nuovo di Rialto (restored 1553 and 1860) and on the other bank of the canal the Fondaco dei Tedeschi (1508), also particularly the marble Rialto Bridge with arch of 88.6 ft. wide.

Whether previously intended or not, here is expressed an idea, which provides a more extended view from the angle of the building near S. Giovanni to the row of houses of Place S. Bartolomeo and reaches the Place S. Jacopo lying on the left, i.e. only touching and not penetrating the last. The Place is thus merely a side enlargement of the main course of the street.

At the Riva del Vino, just before the ascent to the Rialto Bridge, the axis of the street has a slight bend in its direction to the Place S. Bartolomeo. The distance from S. Giovanni to S. Bartolomeo is 754.6 ft. Thus also in compact and angular Venice is an attempt to secure a long continuous street line, that is but slightly affected by the elevation of the bridge arch, but still adds a long line for the extension. Thereby is designed a plan, executed at great expense, that would not fail in effect, but it should have been on a level in appearance with the marble palaces and churches of the city. This one straight street does not run from a centre, nor from a prominent building with which it is connected, and it is therefore not intended for a definite effect. It is otherwise with the three long streets that extend from before the Gate and Place del Popolo toward the interior of the city. Radiating in three different directions (Fig. 693), they conduct the visitor to eternal Rome into the heart of the city, first through the Gate, then through the vestibule and passage to

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741 the interior, the nome.

742 A further and characteristic part in the arrangement of Italian cities in the time of the Renaissance is played by the location of the palaces of the rulers, and the course of the streets within the city. It is one way for the places with a tyranny as the form of government, a different one for a republican organization.

508. Influence of Tyranny or Republic on Location of Palaces.

In the former the rulers kept the rear free, if natural conditions permitted, choosing an elevated locality, dominating the city and inhabitants from thence. In cities with a republican government, the state and commercial buildings were placed at the centre.

509. Course of the Streets.

Care was taken to have the arteries of traffic extend from the circumference of the city directly thereto.

510. Centripetal Arrangement.

Thus the course of the streets was centripetal, as for example is the case in Bologna (Fig. 689), and is still so. This city was already a Roman colony in 189 B. C., and came under the rule of Bentivoglio in 1401, so that we here have to do with an early plan. We find a similar one, as an exception to the rule, in Udine (Fig. 690; Castle restored in 1517 by Fontana), and also in Ferrara; the castle in one rising from a high elevation, in the other being surrounded by broad moats. In both cases the occupants could check the inhabitants, including the unruly elements therein. In Milan, Novara, Brescia (Fig. 691), Cremona, Bergamo (fortified in 1501 by the Venetians), Cortona, S. Gimignano, Ancona, Socleto, Rimini, Bari, Brindisi, etc., the seat of the ruler is placed at the outer edge of the city to be protected or dominated, and this almost became a characteristic of a city ruled by a tyrant.

511. Milan.

Outside the Roman city walls, Milan already in 1157 was surrounded by a wall and moat, the existing Naviglio, which was followed by a second one (1340) for the protection of the suburb. The Viscontis and Sforzas assumed the rule (1450-1535) and the culture of art in the city. In what sense this was intended is plainly shown by Fig. 692.

743 512. Course of the Streets in Rome near Gate del Popolo.

At the beginning it was stated, that the centripetal or centrifugal arrangement of the course of the streets was determined by political reasons; but these might also be entirely practical. For the plan of three streets near Gate del Popolo in Rome this was certainly the case. Here the natural conditions of the locality compelled this; the ancient Via Flaminia from the Bridge Molle to the Capitol in an accurately straight line was from ancient times one of the sacred and fixed streets, on its left the Tiber forming the natural border of the ground, on the right being the steeply rising Monte Pincio. Neither could be moved; along its back and beside the foot of Pincio were the only possible places for building, unless the ancient military road was to be sacrificed. Thus the often surprising course of the streets resulted of itself, and which was certainly the same already in antiquity. Michelangelo was entrusted in 1561 under Pius IV with the existing Gate to the Place, yet it was only later constructed of travertine by Vignola. The connection between the heights of the streets of Via Flaminia and of Via del Babuina is made by two great flights of steps near S. M. del Popolo and near Trinita del Monte, that show a difference in height of 65.6 to 98.4 ft. (See Letarouilly, text, p. 111). Determinative for a similar centripetal arrangement the streets in Rome was at another point the course of the Tiber and the location of the Castle of S. Angelo. (figs. 693, 694). The radial arrangement of the streets is also compelled here by local conditions, and not by any academical experiment. For the course of the streets was also determinative the assumed system of the blocks for buildings. This was required by the form and location of the plan of the city.

Man was master of the situation on the plane, but on a hilly location, where the place for building is often shaped like a polypus with extended arms, man must yield and make a virtue of the necessity. (See Perugia, Volterra and others).

513. Leading Motive of the Course of the Streets.

The leading impulse to the course of the streets was always given by the ancient Roman plan of the city, according to which two principal streets intersected at right angles according to certain points of the compass, within which were located

the blocks produced for buildings, separated by narrow streets.

514. Square Blocks in Turin and Novara.

They are to be recognized still in nearly all Italian cities, as for example in Turin, Novara, etc. (Figs. 695, 696), where the ancient Roman camp is indicated by long and broad streets with rectangular blocks of houses, frequently connected by arcades (porticos). The old portion of the city is to be referred to the time of the emperor Augustus; it exhibits a rectangle with 11 towers at each side. Since the 17th century the newer city has been extended in the sense of the ancient plan without disjointing, only excepting the two diagonal streets from the royal castle to the two bridges over the Po.

515. Hippodomic Plan of Streets.

This regular plan is usually termed hippodomic, its inventor Hippodamos belonging to the Alexandrine time. But it was already in force in ancient Babylon, in Selinus, Paestum, Cyrene and Miletus, where all streets extend in straight lines; moreover in Babylon the principal and cross streets had as many gates as alleys. (See Dürm, *Baukunst der Griechen*, 3rd edition. Part II, Vol. 1, p. 221-224 of this Handbook). Any "hippodomic", when others had already made them more than a century earlier? Always again the story of Columbus and of Vancouver!

What men already long before had expressed was later cast into the shade by the plan in Rome, and all speak of Rome and then forget Bologna! A natural procedure is stamped on an art work, and the course of the streets before the Palace in Versailles, that from 1632 onward was raised to the permanent residence of the king of France, will even be nothing more than the ancient Via Flaminia in the Avenue de Paris, the Via Ripetta in the Avenue des Sceaux, and the Babuino in the Avenue S. Cloud, translated from Italian to French. Both plans have the same sense, only being changed into other dimensions. And if it be asserted today, that such imitations in smaller proportions in a flat country, compelled by nothing more than the strong will of a master and an energetic engineer, as before the Palace of Versailles, "three streets slightly diverging within a sector of 60°", and that this procedure was repeated in the young technical city of Karlsruhe in Baden," then shall this be emphasized, only because technicians have exor-

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expressed themselves against it. It is yet somewhat different, when the princely founder of a city fixes in the midst of a forest a starting point for a palace, from which 32 radii are drawn at equal distances, are wooded like alleys, 8 of these sectors being assigned for building purposes.

516. The Ideal City.

From the same source we derive, that in the time of the Renaissance in Italy the ideal city originated, and symbolizing the idea of the ruler, radial streets were arranged from a tower or palace, and that these were also connected together at right angles." How the last step should become practical, must still be explained! Personal safety and not symbolism was the impelling element!

517. The Decoration of Places.

Of the ornamentation of Places, we have already seen that it consisted of springing fountains, memorial columns and statues. We place these today chiefly on one of the principal axes or in the centre of the Place. The masters of the Renaissance indeed did the same, but not without exceptions. The location of these statues again is mostly fixed by local conditions and the mode of use of the Place. The equestrian statue of Marcus Aurelius stands on the middle axis of the Place of the Capitol; the steps lying before Palace Capitol have two branches, the entrances to Palace Conservators lie on the longer facade next the Place. To pass into the interiors of these buildings, one must turn to right and left from the ramp for access. The rider in the chosen location never constructs the way, but rather points it out. It is otherwise in Florence with Place della Signoria. The Ammannati Fountain with its grand ornamental statues is placed close to the facade of Palace Vecchio, and only the equestrian statue of Cosimo I stands between this and Palace Uccellini, thus not at the intersection of the two middle axes of the Place (Fig. 697). On Place S. Annunziata the equestrian statue of Ferdinand I is indeed located back on the middle axis of the street of access and of the Place of the Church, but is not at the centre, i.e., at the intersection of the middle longitudinal and transverse axes of the Place. Men wished to keep this and its porticos free for assemblage and church festivals, and therefore placed the statue back at the entrances of the port-

porticoes, creating a substitute for the middle of the Place by arranging at the sides two low bronze fountains. The sculptured ornamentation was thus happily distributed, and the utility of the ground in its greatest extent was not restricted by decorations (Fig. 698). The two obelisks on Place S. Maria Novella in Florence stand on the principal middle axis of the Place and do not refer to the middle of the great facade of the Church S. Maria. On Place S. Croce and Place Vittorio Emanuele the statues stand at the centres of the squares; but both are wooden and accordingly are exhibited as good and bad, which especially appears at the evening musical performances on the Place. In Vicenza, Padua and Venice the areas of the small squares enclosed by buildings are left free for traffic and festivals, the memorial columns and the like are set at the entrances of the squares, thus being out of the way of certain occasions at festivals, aside from producing a fixed architectural background for the statues. One cannot often set these near enough to the background, was once stated by F. A. Kaulsdan at the Competition concerning the question of location of the Monument of Emperor Wilhelm in Berlin, respecting the position of the monument of the Great Elector there.

In Venice the Coliseum Monument stands at the right corner of the Place and near the Church. Thus a not large square must be free for entrance to Church Ss. Giovanni e Paolo and to the School S. Marco. The equestrian statue must leave room. Thus here are first practical and not the so-called esthetic reasons. Likewise Donatello's Gattamelato must recede to the corner on Place del Santo forming the square.

The two columns on the Piazzetta at Venice in a way form the uncovered entrance portal to the Place, just as in Vicenza and Padua; in Venice from the lagoons and the Molo, in the other squares from the narrow streets. Neither the Piazzetta nor the great Place would have permitted the reception of a statue, wherefore the new Italy has also located its Victor Emanuel Monument in a well chosen manner on Riva di Schiavoni. The Place S. Marco could only receive the three masts for flags, but which are again art works of the first rank.

The Neptune Fountain in Bologna was erected by its contemporaries on a corner of the Place and not on the square before S. Petronio, which was desired to be free for festivals and

for visitors to the first building of the state and to the largest church in the city. Modern times located there the Monument to the king!

In Rome the two mighty fountains on the Place S. Peter are set back quite to the sides of the Place, so that the principal facade of the church is not injured, leaving only the pointed obelisk to stand at the middle, that disturbs nothing. (Fig. 699). The colonnades of Bernini form the grandest enclosure of the Place, that can be imagined.

On Place Farnese the two great water basins are located to right and left of the middle axis of Palace Farnese in order to leave free access to the building. On the long Place Navona the fountains stand at three points on the longitudinal axis, recalling the spina of the ancient circus, etc. (Fig. 700).

As a rule for locating art works on public squares, one can only repeat the words of Gottfried Semper:-- "That art knows out one master -- necessity." And only from this point of view are the locations to be considered, without rules or esthetic empty phrases. And what otherwise in this amazes us are mostly things, that did not originally exist, and also were never intended, only gradually in time originating from the pressure of circumstances and accidents. But in no case must the traffic and the purpose of the Place be injured by the ornamentation. Therefore also a strongly frequented traffic street is also calmly extended, so as to merely pass along one side of the Place, in other words the Place is arranged as a great enlargement of the traffic street, as this is done in Florence and Venice (Place della Signoria and Rialto) in a skilful way, grandly at Palace Royal and at Place del Duomo in Palermo. (Fig. 701). This rule is therefore no invention of the modern period, just as little as for reasons of defense against an entering enemy are the stepped angles in mediaeval cities, which are again brought out of the lumber room as a picturesque motive in the treatment of cities. (But these recessions are often, for example at Schaffhausen, arranged in the wrong direction for this sense!).

Finally a further word on the treatment of the Place before the structure of S. Peter in Rome according to the statements of Fontana. Concerning this have already been spoken many w

words of praise and blame; many things have been sought behind the arrangements, that are not concealed there, and finally were very simple reasons, that compelled the form existing to-day. Then it should not be forgotten, that the floor of the church lies very much higher than the street of access, i.e. a considerable fall from the doorsill to the Tiber bridge (B Bridge S. Angelo) was to be overcome. The heights of both were given; likewise the form of Place S. Peter was partly limited by the Vatican and partly by the existing houses on the other side; also to be considered was the necessity of a rapid removal of rainwater on such a great Place during storm and continued rains.

The differences in the levels of the ground led to the design of the great stepped terrace A (Fig. 699), and the great size of this was due to the presence of thousands after the close of a festival service. By the semicircular form of the porticos E, F, Bernini skillfully screened the adjacent buildings, and yet retained a great atrium, which has the area of the dimensions of the Colosseum. The width of the facade with the portals gave the beginning points of the connecting corridors D, E, toward the porticos, whose position was as good as given by the descending ground. If the circular form of the porticos was to remain effective, then the opening for the view of S. Peter must not be made too wide, whereby again the ends of the corridors at this side were fixed. Thus originated indeed the inclined floor and cornice lines on the corridors. Through the latter men passed to the Palace, to the Royal Stairs and the House of God. To facilitate access of the people Fontana says, ²⁵⁶ there was given to them a gentle inclination, since the church lies higher than the beginning of the porticos. The problem could only be solved by the arrangement of numerous steps or by an inclined plane. To not fall into greater faults, men decided for the latter. The members of the corridors must then be made parallel to the inclination of the Place, while evidently the pilasters and window jambs must be vertical. Thus is explained the peculiarity of the oblique architecture of the connecting corridors. Nowhere in the descriptions of the old master is there any reference to any perspective folly; everything is explained by the practical necessity.

Note 256. Fontana. Book IV. Chapter V. p. 195.

At m in Fig. 699 the porticos were once to end with two great portals at right and left, but this was omitted. On the other hand, Fontana designed to erect at B, at the same distance as from the obelisk to the church, a bell tower or a magnificent piece of architecture, as a substitute for the removed tower of Bernini, behind this at W being a great fountain, with other connecting porticos A, N, R, extending thereto, and animated by fountains at R. With regard to the course of the Tiber, the street converged toward a, b, so as to lose no area for building. But if a piece of perspective art is to be found in the arrangement, then this could only be effective for the loggia, from which the Pope dispenses blessings; this alone by the extent of the arrangement before the church reproduced in Fig. 699, could produce illusions as to the extent of the Place and the lengths of the streets of access, as well as to the numbers of the believing multitude waiting there.

With the like prosaeness of his views, Fontana also explains to us the quite astonishing design of the Scala Regia, in which a perspective illusion was also not intended. He says, that when the Pope desired to go from the Palace to the Church, the then existing passage was dark and dangerous; therefore he had another made by Bernini, well lighted and splendid, with excellent ornaments. The problem is represented as unusually difficult, for he had to consider the following:--

- a. The course of the wall of the Sistine Chapel.
- b. The course of the before mentioned connecting corridor.
- c. The entrance to the Vaticano Reale, which had the same height of imposts as that required for the arches of the corridor.
- d. A change to the narrow fillet next the wall of the Sistine, that must be made.
- e. A reduction in the height of the vaults, required by the location of the floor of the Scala Regia.

Here is also nothing of an intended perspective effect!

How Bernini solved the problem under these difficult conditions is wonderful.

518. Sky Line of the City.

To enhance the picturesque effect of the sky line of the c

city frequently subjected, what they had designed so many great buildings with reference to this. Starting points for this or written evidences are unknown to me, and here the local conditions had the leading part. Perspective views depend in their quality on the possible standpoint of the observer. The Cathedral dome with eight sides affords a very tasteless appearance according to the standpoint.

519. Domes and Towers.

Domes and towers or the accenting of them come in question. Cypressess and oines are taken as models from living nature. By skilful grouping, they may rise to a majestic whole, but they may also cause offence. Whether the projected bell tower for S. Peter would have enhanced the dignity and might of the dome is indeed very much a question. What often still strongly influences the skyline of a city, and not seldom indeed in a very brutal way, are the plain, unornamented, unnecessarily high signal and lookout towers. (See the leaning towers in Bologna). These lofty church and secular structures can harmonize, and if located at the right place, heighten the charm of a city skyline, but also injure it, if not well distributed.

520. Skyscrapers in S. Gimignano, Bologna, Siena, etc.

The Americans have recently cultivated lofty structures of certain kinds. The skyscrapers are stared at as novelties, and the "best and most important city designers" of Germany recommend their adoption for our great cities. An essay on "Berlin's third dimension" expresses this. But need we therefore ask America for advice? On the architectural and picturesque effect of these things, one may indeed have a different opinion; but we should be ungrateful, did we not remember here, that the Italians of the middle ages were already busied in the same direction, and preferred the third dimension as predominating, i.e., made it the prevailing one for a building.

But they do not concern parts of fortifications or of public buildings, but are rather portions of private houses, which were utilized for attack and defense in party feuds, likewise for pleasure in quiet times. (See Rom. Pantani in *Italia Artistica* no. 11). In the little city of S. Gimignano in the cinquecento period existed 25 such private towers, built of travertine and Macigno stone, each with a height of 167.8 ft.,

which private towers were not permitted to exceed. There still stand 18, that are distributed over a city area of 2625×1641 ft. How effective they are in the skyline of the city is shown by Fig. 702. It is possible that also Italy does not oppose a repetition of this mediaeval mode of beautifying a city, but it is improbable for me.

In the new arrangement of blocks of houses in the city extensions of the larger places the "mode of Hippodamos" is followed. (Rome, Florence, Turin, Milan, Bari, Barietta, etc.).

The appearance of the fourth dimension in architecture perhaps brings something new; but if men already now desire buildings to appear larger, than they really are, then should be recommended the preference of public places of trapezoidal form, with the location of the important buildings along the longer side of the trapezoid (Place of the Capitol and Place of S. Peter in Rome, Cathedral Place in Pienza), with which I recall the keyhole near S. Sacina, famous in its time (Villa of Maltese Priory, Council), (See Noni's Skizzenbuch), which foreigners must see S. Peters dome through, on the principle, that the view of a building has the greater effect, the smaller the opening through which it is seen.

Section XXII. General.

521. Survey.

For the estimation of the monumental religious buildings of the Renaissance in Italy, must be recommended in a higher degree than for other architectural works, to cast a glance on what the preceding period with its religious views had created in this domain.

In the Houses of God culminate the architectural creations of all nations. The highest will and knowledge in monumental art is expressed therein. Greeks and Romans, Romance and Germanic races exert themselves in the same endeavors, to present a place for their highest nature, then an ideal kind, such as imagination can only devise. Some give him a home, wherein he dwells quietly and concealed, where he only receives the visits of chosen ones, and accepts sacrifices and gifts; others make his home an assembly place, where believers in common have intercourse with the deity present in the spirit.

This is the characteristic difference between the temples of the heathen gods and those of the Christian God. The former were not intended to receive a multitude of believers in doctrinal harmony for common sacrifice and prayer; they should be only the sacred dwellings of the deity, that men venerated.

The original impersonal deity in time became personal, whose perceptible image required for itself the same shelter affording protection as the mortals on earth. The deity assumed the human form, whose virtues and vices were attributed to him; hate and love, generosity and revenge were his own. They envied, persecuted and punished. The image of the deity is dependent on the art of a people; clumsy and lacored in the time of the beginning of formative art, perfected and spirited in the best period. Severe and rigid forms, ordered by the priesthood, are opposed to individual and living representation. From the most common and handiest material to the most costly and richest was employed for making the image of the god.

The same steps as the image of the deity likewise had the House of God to pass through. First the hut built of wood, then the woodwork with panels, covered by terra cotta and sheet metal, then the construction with mixed stone and wood; finally the stone temple constructed entirely of permanent materials,

intended for time and eternity, with stone ceiling and stone roof. A canopy, four columns and a roof over this, or four walls and a roof with a portico placed on one, two or four sides, were indeed the oldest forms, that reappear in all later buildings.

322. Houses of the Deities of the Greeks.

In the best period of Grecian architecture appears the house of the deity on a substructure of several steps like a consecrated offering to the deity, built of white shining limestone as a house adorned by columns, and represented with the noblest ornamentation by sculptures. Its interior either consisted of an elongated room, divided in depth into three apartments, into vestibule, sacred and most sacred rooms, in which stood the statue of the god; or merely of front and rear rooms, separated from each other by a single transverse wall. According to the magnitude of the temple is the cell divided into two or three aisles by colonnades of small columns, mostly in two tiers, or it is surrounded by projecting pilasters with a sort of series of chapels enclosing a single aisle. For temple cells of greater span the inserted columns also had a structural value and reason, to reduce the free span of the ceiling beams. The interior received light only through the great doorway extending to the ceiling. According to the position of the sun and the season of the year, a mysterious twilight may have prevailed within the magnificently decorated house of the deity, which may have brought the believers into a religious harmony in offering their sacrificial gifts, that was not common, and likewise did not occur on fixed days.

The interior with its ornamental statues and consecrated gifts was like a museum, created in reference to the deity, not to affect in a majestic way the masses, but rather the minds of individuals, which priests and the architect must have attained. But what must speak more strongly to the people was the peculiar location of the temples in groups, and the creation of separate sacred precincts. Generally grouped together in the higher city on an elevated plateau of rock enclosed by walls, to which led flights of stone steps, access barred by massive gateway structures -- in such wise do we see in noblest perfection the temple group on the citadel of Athens!

Separated from the traffic of the city, only with a view of

Separated from the traffic of the city, only with a view of mountains and sea, these houses of deities lie in a precinct enclosed by strong walls, and thus must they be taken, the precinct must be allowed to affect us as an entirety. Toward sunset gray Hymettus there at the east is colored a warm violet, Lycabettus a brownish red, Pentelicon a deep blue, and its quarry red; Acrocorinth glows in a red haze; the mountains of Megara seem transformed into gold. The sea with its islands is sometimes dark blue, sometimes emerald, and then milky; redly gleams the landscape and the leaves of the trees above it, the marble ruins of the temples are covered by a glow and appear colossal. The inspired eye allows them to arise anew in their decoration by sculptures, and thus creates for itself a picture of the most sublime kind, in which one believes the manifestation of the deity is multiplied. (See Julius Braun, *Geschichte der Kunst*, established on the basis of knowledge of the locality).

528. West Roman Temple Structures.

Roman art in part took the same course. The houses of the deities received an allied form and arrangement; for they were likewise not intended to contain a multitude of believers. Modest in material and in magnitude in the time of the kings and of the republic (perhaps excepting the capitoline Temple of Jupiter) were they built, and imperial Rome first created a change herein. The most costly building material in the world was collected; the earlier temporary polychromy must yield to the permanent. Stones of varied colors were introduced; granite columns with metal ornaments and white marble beams appeared, and what is most important, the wooden ceiling of the cell gave place to the stone ceiling in vaulted form!

The art of vaulting reached its climax, when a change in kind of masonry appeared.

In the Augustan period, construction with thorough and regularly coursed cut stones was abandoned, and masonry was built of boulders or small spalls connected by cement mortar, which was only subdivided or faced with ashlar or bricks. A sort of cellular masonry was constructed, requiring indeed a greater thickness of walls, only the external visible surfaces showing stones of regular form, between which was filled a mixture of stone spalls and mortar in layers of moderate ascent.

These layers were succeeded by bonding stones, above which was repeated the same kind of masonry. Thus originated a network of strong stones, like the cells of a honeycomb, whose cavities were filled with concrete masonry, and the same procedure was also employed in the construction of massive stone ceilings and vaults. Economy and lightness of ceilings with entire monumentality characterized this kind of construction.

While for the colonnade of the deity, the tunnel vault retained exclusive sway as the form of the ceiling, for polygonal and circular plans appeared cloister and spherical vaults in its place.

The circular form of the temple, indeed likewise derived from an ancient form of house (capanna of Roman shepherds, huts in form of houses), was only sporadically found among the Greeks, and likewise in Roman architecture it does not belong to the usual form; but the most important structure created by Roman architecture is to be counted here; the world famous Pantheon in Rome, with a span or internal diameter of 142.7 ft. for the vault, which seeks its equal until our days. Built on a circular substructure of two rings of concrete walls connected together by radial walls, a subdivision of the interior in eight niches results, rises a hemispherical dome with a great opening at the apex. The shaping motives are simplest; on a strong cylinder being a hemisphere, open at the top, to the interior of which leads a massive portico of eight columns.

What is it, that so powerfully affects the observer, when he has passed through the bronze, still antique entrance door? What calls forth the overpowering impression even in the existing mutilation? -- The magnitude and simplicity of the interior, and above all the unity of the lighting, that as if from a particular star falls in the interior from a single point, uniformly illuminating ceiling, wall and floor! But by reflection we receive yet another impression, that holds us entranced, which is the magnitude in comparison with other works of architecture. Like a stone world stands the interior before us, within which we could place the most wonderful works of German, French and Spanish architecture. Contrasted with this mighty central structure in what concerns the internal effect, the vaulted triple-aisled Basilica of Maxentius with its grand

cross and tunnel vaults, of which the first determine the effect in the interior.

526 The exteriors are conceivably simple for both buildings; no value is placed thereon, such as for Grecian temples; only the interiors must powerfully and intensely affect observers, and in this consists a transfer of the climax of the architectural problem. Men no longer desire to impress by an ornamental exterior, or a harmony produced by a massing of similar things in an area; they only wish to allow the interior to speak for itself, and to this expression was a firm adherence in subsequent times, though certainly in changed conditions of culture.

524. Byzantine Temples and Churches.

With the division of the Roman empire and the transfer of the capital to Byzantium by Constantine the Great, and the introduction of Christianity as the religion of the State, the great problems of architecture were transferred back to the East for a time. Grecian and Roman temples had ceased, and the Christian church appeared in their place with different requirements.

Here the problem was to create an interior, which on certain days should receive a great multitude of believers; therefore the chief weight must be placed on the form of the interior. Late Roman antiquity presented for this, starting points and models most abundantly in the central buildings mentioned, in the basilican plans with several aisles or other public buildings. And this continued together in the youthful Christian art for the Houses of God the elongated basilican plan, the form of the Latin cross with unequal arms, the form of the Greek cross with arms of equal length, and the central plan; this art furthermore understood how to create interiors with grand effects, with the simplest treatment of the exteriors, and by the use of architectural details of a dead art. Not easily will men be able to overcome the special charm exercised on them by the basilicas of Rome and Ravenna.

Only one -- S. Apollinare in Classe -- in Ravenna may be emphasized. Whoever at an early hour in the morning goes from the rice swamps (the landscape and the farm land has altered its form in the meantime) makes a tour to the Pineta, the magnificent pine forests near Ravenna, and suddenly beholds the

picturesquely grouped masses of bricks appear from the fog, and enters the interior of the church, will stand quietly in amazement; a peculiar harmony will overcome him in the abandoned House of God with all its plainness of forms, in which is clothed the architectural idea. A middle aisle 45.9 ft. in width, two side aisles of half that width, the clearstory walls supported by 24 marble columns, a semicircular apse with mosaic decorations, friezes with medallion portraits along the walls of the middle aisle, covered by an open roof framework, indeed formerly painted -- is everything required. The simple grandeur of the interior, the dignified proportions, the not too abundant light poured over the interior, hold us amazed.

If the basilica was also the starting point and indeed remained such in the Byzantine empire, so also the central structure always busied genius. The idea was expressed in the erection of S. Sophia in Constantinople under Justinian during 5 years, built by the Grecian architects Anthemios of Tralles and Isidoros of Miletus in 537. We see in the plan still a combination of the nave and the central building; but the latter becomes victorious in the dome, that dominates the entire design! Structurally here is something grand attempted, that was previously only tried in a tasteless way at small scale, i.e., the dome on piers connected by arches, above a square interior. By means of pendentives extending between the arches is created the supporting ring, on which rises the covering vault in form of a spherical segment of 105 ft. span, that is inferior to that of the Pantheon at Rome by about 32.8 ft., but instead is infinitely bolder in idea and execution. It indicates a milestone in the history of the art of vaulting and an advance of the mightiest kind.

"I have excelled thee, O Solomon!" was Justinian's greeting to the completed structure. No central building in all the world has such a harmonious effect as this! Plain and simple on the exterior, built with the rejection of all ornamental details, indeed with regard to the fact, that this court church lay within the other palace structures, yet the interior makes the impression of grandeur, power and elevation, abounding in the most costly materials! The development of the interior is overpowering, and each step forwards gives new views!

To this is further added the peculiar lighting by 40 small round-headed windows in the base of the dome, which bring the light into the middle interior, while other windows above the galleries and in the apses transmit brightness and streams of light into the side rooms. From the sill of the entrance doorway the eye comprises the entire interior, already from there is visible the dominating dome. This possibility, the nappily weighed details, neither too large nor too small, the manner of the entering light make the interior seem larger, than it actually is, a combination, that substantially contributes to the mighty impression.

We visited the building in the evening during the month of Ramadan and during the great prayer, when it was animated by the believers, who prayed standing, or at times threw themselves down on the wooden floor, on which the direction of Mecca is indicated, producing a muffled hollow thunder in the vaults while the marble walls and the golden mosaics of the domes and arches reflected the gleams from thousands of little lamps, that outline the architectural lines up to the dome, or are arranged in hanging chandeliers -- in these hours the effect of the interior is heightened to the highest degree, and every visitor gladly yields to it, and recognizes the grandeur of the interior in architecture.

525. Mediaeval Christian Houses of God.

A further advance takes us through the confusion of the migrations of the nations, which cleared away the antique, to mediaeval Romanesque and Gothic architecture. Who would miss the charm of the cathedrals and minsters of this period of art, or even esteem them too slightly, that animated the sweet dreams of the years of our childhood by organ tones, the clang of bells and the hymns of the choir, with their forest of columns and lofty elevated vaults with their mysterious lighting, "where even the dear light of heaven breaks darkly through the painted panes". No man, whatever be his faith, can deny the internal effect of these buildings.

But however high the imaginative expression may be esteemed, an internal development, such as that shown by the antique Roman and the Early Christian art in the basilicas, halls of the patns, in the Pantheon and S. Sophia, was denied to them. The endeavor for this may indeed be recognized, but only on

Italian soil. Spans of 48 ft. or but little more were the greatest that the mediaeval art of vaulting attained; beyond this size it did not pass; ancient art exceeded it threefold!

The striving for spaciousness, with the addition of domical construction made itself apparent in the cathedrals of Gothic design at Florence and Bologna in a grander style. While in the north men were satisfied with domes over crossings everywhere with the width of the middle aisle, the south with a racial feeling for spaciousness attempted an extension thereof over the three aisles (middle and two side aisles), and thus enforced the effect of a central building in a peculiar way, with the form of the Latin cross plan, and viewed toward the choir on the exterior.

Now in S. Maria del Fiore at Florence, the dome was designed in a Gothic style, we can see from various representations (Fig. 703),²⁵⁷ remaining to us. How that in Bologna should have been executed is shown to us by the still preserved wooden model in the sacristy of S. Petronio (Fig. 704). Neither was erected. The substructure in Florence was provided by the Gothic architects. They created four massive piers, two of which in the midst of the side aisles are furnished with passages, connected together by pointed arches for the width of the middle aisle. On this structure rose a massive lofty drum with round windows, over which was the octagonal dome in the form of a cloister vault. Up to the drum was carried the structure by the Gothic architects; the dome above it was the first great structural undertaking of a new and interrupting period, aided to victory by novel forms in the domain of architecture, and which it has now utilized for more than four centuries.

526. Churches of the Renaissance in Italy. Characteristics of Domes, external domes and Lanterns.

In the execution of these domes, the first deviation from antique art was the arrangement of a second and external protecting dome over the internal one enclosing the interior; a second is to be sought in the loading of the crown by a lantern.

So interesting is the great structure, so mentally does it rise above the exterior and dominate the building, so importantly does it participate in the view of the city, just as

757 little satisfactory is its effect in the interior by the tastelessness of the architecture, by the badly distributed lighting, by the yellow limewash, and by the paintings on the vault surfaces of the dome, for whose magnitude we only obtain a scale by thought, for example when we from the uppermost gallery at the beginning of the dome allow the eye to fall on the opposite walls, or look down on the floor of the great cathedral, where men appear like a swarm of ants, or measure the figures in the paintings, in which the feet of certain figures show the considerable length of 5 ft. from toe to heel! A charm as in visiting the Pantheon or S. Sophia does not seize on us here, and only the scale obtained by comparison affects us.

On the other hand, 150 years later a second work of the same art period even exceeds the grandest creations of the antique world, of the Byzantines and the Romans, which is S. Peter in Rome! Originally planned as a central structure, it was erected in the form of a Latin cross with a dome over the crossing. This has a span of 139.4 ft., thus being larger than the Florentine, and only 8.8 ft. less than that of the Pantheon, but is again 39.4 ft. larger than that of S. Sophia. It rests on four mighty piers with sides of 48.8 ft., connected together by vast semicircular vaults. Between these are inserted pendentives, as at S. Sophia; but these are no longer spherical triangles but spherical trapezoids, whose form and dimensions are produced by the form of the piers, i.e., by their splay on the inner side, by which the projection of the pendentives is reduced. As at S. Sophia the pendentives combine with the four arches into a basal ring, which does not form the direct support of the dome, while over it rises a yet higher light-origining cylinder (drum), i.e., inserted between the pendentive ring and the dome. "I will place the Pantheon on columns", the first master of the building must have said, -- he might have added, "and the piers of the Church of S. Sophia beneath them", when he would not have said too much!

760 The mighty structural innovation, attempts at which on a small scale, for example preceded the Byzantine churches, was the form of the supporting piers, the addition of a cylinder, admitting light, and the placing thereon a dome in two shells with a lantern, all in dimensions previously unknown to arch-

architecture. The ascent from the pavement to the apex of the lantern in the Cathedral of S. Peter amounts to 403.6 ft., thus more than double that at S. Sophia. If the details of the internal architecture were somewhat more modest, no building in the world would equal it in proportions, beauty and magnificence of decoration. The light falls too abundantly in the noble and mighty interior, allowing the finest details of the ornamentation and of the mosaic-colored decorations to be recognized, which is everywhere happily harmonized. No mystic gloom tarries through the interior; everywhere is the southern sun, that shines on and warms the splendor of the materials, the gilding and the mosaic pictures. Dignity and solidity from the vertex of the dome to the floor, and the feeling of elevation and beauty penetrates the observer and warns him of the nearness of the Deity! But whoever desires to see the interior even increase in magnitude, will await one of the great church festivals. The side windows are draped and admit but little light; only the dome lavishes daylight from above, but not to its full extent, for the windows of the light-bringing drum are covered by light fabrics, -- then the dimensions increase to the unexpected. If then the wax candles are lighted on the continuous cornices, to light from right and left the altar of the ciborium, which is itself transformed into a sea of light, the two colossal chandeliers that support more than 10,000 candles, the domed interior, then will be contented, who desires to retail the mystical within a House of God. On such festal days the exterior is not interior; with the growing darkness it gleams with ornamentation by lights. The principal lines of the structure, the ribs of the dome, the cornices of the broad colonnades shine with the silver light of small lamps -- the so-called "silvery illumination"; with the stroke of a bell at ten this passes into the "golden", when as by a magical stroke between the small white lights are inserted great orange ones, and on the lantern rises the cross of Christianity gleaming afar! Thus I beheld the scene for the last time in the year 1863. But whoever as a serious man would behold the grandeur of S. Peter's externally, let him wander on the Janiculum, and take his place beneath the ever-green oaks, that rise above the wall of Villa Pamphili-Doria, and look toward it. Like an island lies the Vatican group be-

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before him, from which rises the dome almost in general elevation and with the most beautiful outline in the world, which the master Michelangelo conceived, and could even fix in a wooden model before he closed his eyes. What he conceived, he was forbidden to behold in the completed work!

As if cast in bronze, stands St. Peter's structure against the blue sky, growing upward from the earth gleaming in violet and yellowish-brown, in the distance are the misty heights of the Apennines with the notched Soracte and the snow covered caps of Mt. Leonessa, which terminate the picture, a view of the grandeur, earnestness and beauty of a work of man, never again attained, silent because unsurpassed.

527. Massiveness of the Interior.

According to the foregoing, it was the massiveness of the interior with which the Renaissance architects believed they must first reckon, and justly first of all, if they did not lose the purpose of the building, and wished to affect the minds of believers by this might. And they succeeded like few others, even if also the exteriors fell short in many cases.

528. Ecclesiastical Style and Treatment of Forms.

As the antique knew no ecclesiastical style of architecture, just as little as the Renaissance one to exhibit. "In the south greatness and beauty are holy of themselves, and true art is noble and pious of itself; for already the endeavor after perfection elevates the soul to devotion, when it approaches and unites itself to God". (Words of Michelangelo in 1549).

The form expression, like that of secular buildings, is here borrowed, misunderstood at first, later imitated from the dryness of the antique, then degenerate and running the same course as in the ancient time, where the production of new forms of details was not excluded, to which reference has been made already.

Pointed, segmental and round arches, as well as oval arches, were employed for spanning openings and as lines or vaults, and also the horizontal architrave -- that first named mostly only in structures of the transition style and of the early Renaissance, where also the details are still under the constraint of the mediaeval form expression. (See the view of the facade of the Cathedral of Civita Castellana, a work of the Cosmati, dated 1210).

762 From Early Christian art, from Early Christian church designs in Italy must proceed the following considerations, since they were the first places in which the followers of the new religion gathered for a common veneration of God. What was taken from them, what was added thereto by the Romanesque, and what by the Gothic middle ages?

529. Orientation.

A liturgical rather than architectural question is that of the orientation of church buildings. Where free space existed, men adhered to the line of direction of the longitudinal axis from East to West, taken from the antique temples, also in the first Christian Houses of God, when in Rome the altar was mostly placed at the western end, but on the contrary in Ravenna at the eastern; the latter arrangement formed the general rule in the middle ages. Was it also followed in the Renaissance? No; adherence to it could no longer be strictly obeyed already on account of the fixed subdivision of the interiors of cities, by the arrangement and location of the course of the streets and open places. It soon exhibited numerous exceptions; but still there are enough famous examples to continue the rule. In Rome Church Gesu, the Pilgrimage Church in Loreto, in Florence S. Spirito and S. Annunziata, in Mantua S. Andrea, in Padua S. Giustina and S. Carmine, in Venice S. Giorgio Maggiore, S. Salvatore, and many others are orientated. Accurate statistics concerning orientation have only been collected for the churches in Rome, in which all directions of the compass are represented!

The basal scheme -- the Early Christian basilica with three aisles -- to which mediaeval architecture also firmly adhered, in great part continued for the Renaissance. The scheme of the moderate transverse aisle was retained, such as Romanesque art had established; likewise the arrangement of the dimensions between the supports and those of the bays in most cases were assumed according to the Romanesque customs.

530. Church Plan; Basilican Arrangement.

The basilican plan with its united internal perspective was especially suited to characterize the House of God as a long structure; it became in the plan a rectangular form with strongly expressed predominance of the longer sides, and by subdivision by open arcades into an unequal number of aisles, (1,

3 and 5), where the middle one always remained wider; the ending of these is mostly formed by a semicircular apse.

The origin of this architectural idea must be regarded as first found by Leo Battista Alberti in the Roman legal basilica, a conception later opposed by another, according to which the church basilica is to be regarded as a product of Christian worship and intellect created in the time of Constantine, a view to which Hübsch particularly adhered. But in the year 1847 it first experienced a contradiction by Zestermann, who placed the germ of the Christian basilica in antique Roman palace architecture, on the argument, that the house of a Roman patrician among its parts regularly possessed a hall with a particular form and name, the basilica.

To these three theories Denio ²⁵⁸ opposed a fourth, to which one would gladly assent, on account of its logical and technical statements. Only in the houses of citizens could the first Christians have assembled, and therefore from the dwelling were taken the parts of the basilica. The tablinum became the seat of the director as an apse; the wings became the transepts, in which the deacons and deaconesses gathered; the atrium became the nave, wherein believers attended divine service. For those collected in the atrium or the columnar peristyle must be provided protection from wind and weather, without thereby being compelled to accept a darkening. The system of the compluvium was therefore to be retained no longer, and the covered atrium of Vitruvius appeared in its place, where the introduction of light occurred in the really antique way by a superstructure with side lights, as the case in the hypostyle halls of the Egyptians and Assyrians, as well as for the Greeks of the Alexandrine period. The exterior above the cornice of the peristyle formed an elevated wall of the main aisle with windows, which was either covered by a horizontal wooden ceiling, or by the visible so-called "open" framework of the roof.

Note 258. Denio & Von Bezold. Die kirchliche Baukunst des Abendlandes. Stuttgart. 1884. 1901. p. 63.

531. Plan with single Aisle with nine side Lights, three and five aisled Plans, and their Mode of Lighting.

In general the forms appear as the plan with one aisle with nine side lights, those with three and five aisles with elev-

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elevated light at the sides of the middle aisle, and with windows in the walls of the side aisles. The insertion of galleries in the side aisles remained principally an eastern arrangement, but which occurs occasionally in the West; as specifically western is to be termed the plan of the transverse aisle.

582. Basilicas with Piers and with Columns.

Vestibule, nave and choir form the parts of the basilica, an arrangement to which the early middle ages and the Renaissance also remained faithful. piers and columns alternate in both modes of construction as supports of the clearstory walls. As columnar basilicas are mentioned as examples the two churches of S. Lorenzo and S. Spirito in Florence, as pier basilicas, the Cathedrals in Udine, Treviso and Pavia.

583. Vestibule.

The separating vestibule generally went out of use about the end of the first millenium (1000 A.D.); where such a one became ruinous, it was no longer restored. The Renaissance took up the idea again for some buildings, and embodied it in a most interesting way in S. Annunziata in Florence, in S. M. Maria Maddalena de' Pazzi there, at the Parish Church S. Lorenzo in Chiavenna at a great scale, where in the middle of the forecourt rises free the slender bell tower; then at S. Maria at Abbiategrasso, in S. Sisto at Piacenza and other places. Thus it undertakes here nothing new in church architecture; it merely repeats old instances, yet only separately, again in changed form and in a splendid manner.

Just as the atrium on Early Christian basilicas were transformed to simple vestibules (S. Lorenzo w-t-w, S. Giorgio in Velabro at Rome and others), this procedure was also completed in the Renaissance, indeed in some splendid examples, such as at the Cathedral in Spoleto, connected with the arrangement of two pulpits for preaching, in classical manner at S. Maria in Navicella at Rome, as shown at S. Maria della Grazie in Arezzo (see plan in Fig. 706), at the Church alla Madonna del Pozzo in Empoli (see view in Fig. 707), at S. Annunziata in Florence, and at S. Maria presso S. Celso in Milan (see Fig. 30). A plain vestibule with three arches, placed between two towers, was built at the Incoronata in Lodi; an entirely closed vestibule only accessible by a doorway was executed by the Renaissance in a splendid manner at S. Umilta in Pistoja,

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and more simply at S. Sebastiano in Mantua.

From the late time should be mentioned as the most magnificent example a work of Hansaga (1591-1678), the vestibule of the Sapienza in Naples (Fig. 708). For a direct extension of the flight of steps to the portal of the elevated church, space was lacking, wherefore the entrances to the vestibule were very skilfully placed at the broad ends and the steps were carried up inside this. 259

Note 259. See Nohl, M. Tagebuch einer Italienische Reise. Stuttgart. 1866. p. 229.

But yet more the original plan of the forecourt is reduced, when it is limited to the form of a massive archway at the entrance portal, that was also previously employed by Romanesque art, and for which we have examples on churches in upper Italy and in the largest way on the gable facade of S. Maria at Abbiategrasso. There the enclosure is formed by side walls with columns in two stories set outside them, which is covered by a semicircular tunnel vault and a gable roof over this. This motive of the triumphal arch only too massively fits into the older low arched porticos surrounding the court. 260

Note 260. For a representation of this, see Stroock, H. Central- und Kuppelkirchenbauten der Renaissance in Italien. Berlin. 1882. Pl. 26 and also Fig. 705 of this volume of the Hand-book.

For facade architecture the elevated middle aisle remained the rule, as soon as the plan with several aisles became common, both for three as well as the five aisled development. In the latter the two side aisles at right and left of the middle aisle were brought under one roof, (see S. Paolo F-l.W in Rome), or these roof slopes were also stopped against the raised walls of the aisles. (See the semigothic Church of S. Trinita in Florence).

Churches with but one aisle, such as mediaeval art frequently produced, also remained by right in the Renaissance and were even preferred. Such with two aisles of equal height and equal widths (two-aisled), such as the Gothic produced in the Tyrol and in north Germany, are unknown to me in the Italian Renaissance; also such were built with but one aisle, sometimes north and sometimes south of the principal aisle, sometimes lower, and sometimes of the same width as the main aisle.

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On this side of the Alps, these churches mostly belong to the mendicant orders, and the side aisle was arranged opposite to the pulpit for reasons of economy and to create space for the congregation.

534. Hall Churches.

Against another innovation created by the middle ages, the so-called hall churches, aisles of equal height under one roof, the Renaissance was tolerably reserved. Among the few hall churches are to be named:-- S. Maria Annunziata in Camerino in the Mark Ancona, and the Cathedral in Pienza built by Rossellino, an unfortunate attempt, which is aided by stilted arches in the side aisles, but on the other hand in the middle aisle places the centre of the arch somewhat lower than the impost moulding. ²⁶²

Note 261. Dehio & Von Bezold (Pl. 534 is incorrect in regard to the arrangement of the vaults in the transept.

Note 262. Published in Geymüller; Rossellino. Pl. 11. -- And Lospeyres. Pl. 49, and Figs. 712, 713, of this Handbuch.

Hall churches presume vaulting throughout, that was also employed by the Renaissance, while the basilican design with vaulting allowed for the side aisles the horizontal wooden ceiling of the middle ages, as well as the vaults in all aisles. In all cases the side thrusts of the vaults were either directly resisted by the insertion of iron or wooden arches or tie-rods, or by wall masses opposed thereto in the form of buttresses, struts, flying buttresses, or by both means together, if the construction were not entirely trusted. In all cases the southeners were animated by a greater trust in God in the solution of this statical question, and were also mostly guided by a more correct feeling on the ground of what they daily saw before their eyes, which they furthermore studied, observed and measured.

535. Cross Sections of Gothic Churches.

Compare for this purpose the mediaeval buildings in Figs. 709, 710, 711, the cross sections of churches in S. Denis, of Longpont, and of S. Maria Novella in Florence. The greatest span of the middle and side aisles is shown by the last church with the least thickness of walls. On the contrary, what wall masses were employed by the French architects of the same period in contrast to the Italian masters, to obtain the same

stability! With what plain and simple means was the same question answered in Florence! On which side is to be found here the principle of obtaining with the least possible use of material the greatest stability and strength! According to the examples chosen, certainly not on the side of the inventors of Gothic!

The Italians likewise in basilican designs never placed the attachment of their flying buttresses or piers so high, or even extending to the height of the roof cornice of the middle aisle; they extend but little above the imposts of the vaults in S. Anastasia in Verona, on the Florentine Cathedral, the Cathedral in Como, at S. Petronio in Bologna (even if they also there are increased to a colossal depth by the partition walls of the chapels), and in S. Francisco there.

Opposed to the middle ages there prevails in the Renaissance in the vaulting of the aisles greater boldness with the use of less material, and a more highly developed feeling of spaciousness. But by this were also already animated the Gothic masters of the Milanese and Florentine cathedrals, as well as the principal Church of S. Petronio in Bologna, when they adopted 52.5 to 57.4 and 59.1 ft. for the vaulted middle aisles of their basilicas, when in Amiens, Strasburg and Cologne, men did not go beyond 45.6 ft.

536. Transverse Aisle and Transepts.

The transverse aisle of the old basilicas reappears, strongly and effectively in the mediaeval churches of Italy in two prominent examples, the plan of S. Maria Novella (Fig. 714)²⁶¹ and S. Croce in Florence, and was repeated by Brunellesco in S. Lorenzo at Florence (Fig. 715)²⁶² in his new style expression; it was carried further in the arrangement of the plan of S. Spirito in Florence (Fig. 716) to the transepts, where the longitudinal and transverse aisles intersect and their arms are extended beyond the intersection. The Latin cross with three equal and one longer arm is here decidedly expressed.

Note 263. Dehio & Von Bezold. p. 95).

537. Altar Space and Chapels: aspects

For the altar space, "the perspective point of view", the soul and master of the entire plan",²⁶³ the semicircular form is normal for the old basilicas; in the middle ages this must

yield to the rectangular and polygonal, but it came again into full honor in the Renaissance, even if for it continued the form of polygonal exterior of the enclosure, usual in Ravenna and Byzantium (dei Servi in Siena), as well as masking by a rectangular enclosure or the regular rectangular internal and external shape, as employed in S. Lorenzo (Fig. 715).

But one altar space no longer sufficed even in the Early Christian period; men sought to secure others in similar endings of the side aisles (see S. Pietro in Vincoli in Rome, Cathedral in Parenzo), and in the middle ages then the "cumulative veneration of saints" required in each larger church a multitude of altars (the old sketch plan of S. Gall,²⁶⁴ already gives 17 of these), for which place could only be found along the side walls of the church, or by continuing the side aisles around the altar space or choir, by which resulted about the middle of the 12th century a series of small chapels (chevet chapels). From this necessity, "not for the better accommodation of a procession", must have originated these arrangements, and they were likewise utilized in the Renaissance.

Note 264. The old original drawing is preserved at this time in the library of the monastery at S. Gall, but is freely shown, though photographic reproduction is forbidden. An instructive mode of the design of the monastery is preserved in the Art Museum, and is to be seen at any time. Also see the representation of the original drawing in Part II, Vol. 4, Hefte 3, of this Handbook).

Many of the single-aisled churches (S. Francisco al Monte in Florence, S. Felicita, Cathedral in Montepulciano, S. Maria dei Servi in Borgo S. Sepulcro, S. Domenico in Recanati, S. Andrea in Mantua, etc.) show the chapels along the side walls of the aisle, and also similarly those with three aisles (Fig. 717);²⁶⁵ S. Maria della Catena in Palermo, also the Cathedral in Pavia (Fig. 718), and before all S. Lorenzo in Florence as well as S. Spirito there, where the chapels surround not only the external walls of the nave, but also those of the transepts and choir, if one can speak of such here. (Fig. 716).

Note 265. Reproduced from Hittorf & Zenth.

538. Dome over Intersection.

The crossing of the transverse and longitudinal aisles dir-

directly leads to a special architectural distinction of this point; it is so important as to require accenting, which occurred in S. Lorenzo and S. Spirito in a tasteless manner by small domes, but for entirely vaulted churches with the form of the Latin cross was already attempted in a grand manner during the middle ages in Italy; on S. Maria del Fiore in Florence and on S. Petronio in Bologna.

772 The crossing was here to be marked both externally and internally by a great dome, and indeed comprised in the dimensions of the three aisles together. The idea matured in the Gothic middle ages in Italy, and could alone ripen there, where the great domed structures of the ancients gave the impulse to similar works. At S. Petronio it was not completed, but the design is still preserved to us in the model. One of the grand churches in the world would be created by its completion, a dome which with 131.2 ft. diameter, would have nearly attained the dimensions of those of Florence and of Rome. The eight supports of the dome in the plan, two of which were constructed as parts of the present church, appear to be far more beautifully subdivided and treated than those on the substructure of the Florentine Cathedral; but whether they were able with the chosen section to support the weight of the dome, and to hold its forces in equilibrium, must be doubted.

Likewise the Pilgrimage Church of Santa Casa at Loreto (Fig. 719) should be placed here; for it is and remains from the House outwards a Gothic structure with "amazing" arrangement of plan and the same basal idea; the Latin cross with a dome over the crossing, which is supported by eight piers and has a diameter equal to the width of the three aisles. (98.4 ft.). Likewise here were the supports made too weak, a defect that Sangallo (Sept. 29, 1499) later sought to remedy, but which Bramante in 1509 first entirely removed.

For the masters of the Renaissance these designs remained with great and permanent influence, and the plan of Loreto was doubtless a model for the design of Cristoforo Recchi for the Cathedral in Pavia. (Compare the two plans in Figs. 718 and 719, where in Loreto special reference is made to the beautiful arrangement of the four chapels on the diagonals of the transepts).

539. Crypts.

In the time of Constantine it was usual in Rome to erect memorial churches over the graves of martyrs, where the grave was placed in intimate connection with the altar; i.e., a small subterranean vault was so placed beneath the high altar, that one could look down into it. From this Early Christian "confessio", connected with the plan of their catacombs, proceeded the late Early Christian and early Romanesque crypt -- the complete lower church with altars, which was then arranged beneath the elevated choir.

The original burial place of the martyr was not concerned, but rather bones brought from elsewhere were deposited in the church, and then men were satisfied by their exhibition above ground and viewed them through a vertical front wall, or made the altar itself a receptacle for them. "The tomb was separated from the permanence of the church", which was made a ground principle in the Gothic period, and was also altered to by the Renaissance.

The Protorenaissance showed an echo of the crypt design in the Church S. Miniato al Monte near Florence, and in the Cathedral of Civita Castellana, while the early and late Renaissance departed therefrom, following the Gothic. The altar table became a sarcophagus for the saint, or where the confession was given, the Renaissance cared for architecturally beautiful entrances to it, as for example in a perfected way as shown in S. Maria Maggiore and in S. Peter in Rome.

540. Towers, their Position and Architectural Treatment.

Towers are not original additions to Christian church-architecture. They are still foreign to the 6th and 7th centuries, and indeed were first distinctly shown in the 8th century in Rome and Ravenna. They either served to receive stairways to the galleries and the attics, or they were built as watch towers. The oldest bells were small and mostly hung in roof turrets. With the introduction of bells heard at a greater distance, the towers were taken for their support. (See the Section on Clock Towers).

The opinion that they did not belong to the parts of the church, men accepted in Italy from the earliest time, and therefore they later also placed them beside the longer sides of the basilicas as detached buildings. This location was

October 1917.

The first of the series of photographs of the tower was taken on the morning of the 1st of October, 1917. The tower was then in a state of complete ruin. The only part of the tower which was still standing was the base. The rest of the tower had been destroyed by the fire. The photographs show the tower in a state of complete ruin. The only part of the tower which was still standing was the base. The rest of the tower had been destroyed by the fire.

The second of the series of photographs of the tower was taken on the morning of the 2nd of October, 1917.

The third of the series of photographs of the tower was taken on the morning of the 3rd of October, 1917. The tower was then in a state of complete ruin. The only part of the tower which was still standing was the base. The rest of the tower had been destroyed by the fire. The photographs show the tower in a state of complete ruin. The only part of the tower which was still standing was the base. The rest of the tower had been destroyed by the fire.

The fourth of the series of photographs of the tower was taken on the morning of the 4th of October, 1917. The tower was then in a state of complete ruin. The only part of the tower which was still standing was the base. The rest of the tower had been destroyed by the fire. The photographs show the tower in a state of complete ruin. The only part of the tower which was still standing was the base. The rest of the tower had been destroyed by the fire.

The fifth of the series of photographs of the tower was taken on the morning of the 5th of October, 1917.

The sixth of the series of photographs of the tower was taken on the morning of the 6th of October, 1917. The tower was then in a state of complete ruin. The only part of the tower which was still standing was the base. The rest of the tower had been destroyed by the fire. The photographs show the tower in a state of complete ruin. The only part of the tower which was still standing was the base. The rest of the tower had been destroyed by the fire.

typical, and was not abandoned in all succeeding phases of architecture in Italy.

While on this side of the Alps architects and the people were enthusiastic for the extremely high architectural characteristics and looked with pride on the attainment of having the towers organically joined to the church, which they carried to a height of 515 ft. with a surpassing luxury of external architecture, and yet paraded many of these additions, not ecclesiastical, men in Italy continued faithful to the opinion of the 8th century, and the new art of the Renaissance made scanty use of this purely external gift of the northern middle ages.

541. The Latin Cross with Dome over the Crossing.

The enhancement of the might and splendor of the interior is later as earlier the principal thing, as the further pursuit of the structural idea laid down in the Cathedral of Florence, in S. Petronio in Bologna, in the Pilgrimage Church of Loreto and the Cathedral at Pavia -- the Latin cross with a great dome over the crossing, and the high aim continued, for which purpose the addition of great towers was not required, or only such of modest dimensions.

The mediaeval and richly-treated bell and clock towers in the cities of upper Italy during the Romanesque period, the towers in Cremona, Pavia, Crema, S. Gottardo in Milan, etc., are all structural masses not organically connected with the nave; the Gothic Cathedral in Florence places its overrich campanile as a free structure at its side, dispensing with the intended spire 93.4 ft. in height; the Cathedrals in Milan, Orvieto and Bologna also stand as church buildings of the first rank without these accessories.

542. Crossing Towers.

Where men still desired to show afar the "finger of the Lord God", and had neither the necessary enjoyment nor courage for a tower or dome, they decided for a combination of both, for a crossing tower, as in Chiaravalle or in Citta di Castello, and constructed in the richest manner as a Renaissance work on the Certosa near Pavia.

Circular or square in cross section are the Early Christian towers in Ravenna, and exceptionally rectangular are those in Rome. To these two forms adhere most of those of the early

Renaissance, and on this Early Christian basis indeed must that of S. Spirito in Rome be termed one of its best creations; on a solid substructure stand four stories, each enclosed by colossal pilasters.

Contrasted with this small Roman brick tower may be the massive, but unfortunately never completed campanice in Ferrara, finely constructed of red and white marble. It likewise exhibits the bisection of the facade surfaces, but no combined low stories, rather high ones subdivided by bold architectural members (Fig. 721), in its way being one of the most dignified towers of the entire style, even if not entirely free from a slight flavor of the recently ended art period. On its basis would have been possible a spirited extension, more easily than by a regular repetition of correct columnar orders. And this I may place the Venetian Campanile of Madonna dell'Orte (Fig. 722), ²⁶⁶ higher in its simplicity and the closed lower stories, than most of those covered by columns or pilasters of a later time.

Note 266. From Cicegnara.

724 Leon Battista Alberti gave a recipe for the bell tower as an isolated structure, wherein he preferred the Ravenna form, and crowned it by an open temple and a domical roof, while he enclosed it by a square portico in the ground story (Fig. 723).

The design may pass as spirited; but it has too little life. To it adhered the fresh Sangiorgi with his tower at S. Michel near Verona, that on a square substructure shows in another story great Palladian windows, over this being an octagonal story with columns at the angles, above being as a termination a circular temple with dome and lantern. (Fig. 724).

727 The two towers of S. Spirito in Florence (Fig. 726) and that of the Madonna di S. Biagio in Monteculciano (Fig. 725) are simpler representatives of the style, where those of S. Spirito (begun by Baccio d'Agnolo (died 1543) and completed after his design under Cosimo I) are conceived with more originality, and do not stick to used motives, like those of the earlier Sangallo. Like the connected church structure, it may be "one of the most perfect architectural works of the high Renaissance," but it lacks a certain warmth. It is only true, that in spite of its twin brother carried but a few yards in height, the tower stands admirably in the entire group, and

According to Laspeyres (p. 19, 20) ²⁶⁷ "its worth especially consists in this, that in contrast to so many projects for towers, on which the Renaissance masters exhausted their gifts in design, that it had to make the great step from paper to stone so quickly, that nothing essential was taken from the original idea of its originator. A master tower of the art period, in which may be said to be expressed the creed for tower structures". (Fig. 725).

On a square mediaeval substructure, transformed into an octagon as in Montepulciano, rises the superstructure of the tower in Modena (Fig. 728), which remains a sound and interesting creation, though not entirely free from mediaeval nature.

Gualiano da Sangallo furnished for S. Lorenzo in Florence the design for a clock tower, ²⁶⁸ which does not belong to the most fortunate created by that master; that it was not built after this is scarcely to be lamented.

Note 268. Geymüller. Giuliano da Sangallo. Pl. 2. Fig. 6.

As the last link in the chain may yet be mentioned the square tower of S. Maria del Carmine in Naples (restored in 1769), likewise changed above into an octagon, which at least is picturesque, has a pretty effect (Fig. 729) and is also well developed.

The tower of the Church S. Maria del Carmine at Siena must not remain without mention (Fig. 727), on account of its depressed form.

As works of the Barocco style may pass the double towers of S. Alessandro in Milan. What Maderna designed for S. Peter in Rome were pretty pavilions on a wide substructure, but not towers, ²⁶⁹ and what Bernini gave certainly did not lack picturesque charm; "the graceful forms of the towers, the open portico-like treatment of the stories, the avoidance of great wall masses, ²⁷⁰ are even to be praised and recognized in a high degree; but the solution appears somewhat theatrical, and too little earnest in comparison to the other parts of the building". The same judgment falls to the flanking towers of the famous Superga near Turin. (By Juvara, 1719-1731; Fig. 858).

Note 269. Illustrated in Gurlitt, G. Geschichte des Barock in Italien. 1887. p. 337.

Note 270. See Gurlitt, also, p. 351-352.

Likewise what master Vanvitelli did on the bell tower near

the Santa Casa in Loreto did not increase his fame. (He created the two upper stories and the bulbous roof).

Quarini's tower on S. Gregorio in Messina is heavy, and its conical spire surrounded by spiral ornaments, crowned by the papal tiara on two crossed keys, is a "Barocco folly".

To this late experiment may be contrasted an earlier one in Renaissance art by Bernardo Rossellino,²⁷¹ the bell tower at the Cathedral in Pienza completed in 1463 (Fig. 780). Dry and poor is the beginning, unskilful the termination.

Note 271. See Geymüller, pls. 11; Lapeyres, p. 18, Pl. 10.

On the other hand, greater interest remains to the fanciful forms of the towers of Borromini near S. Carlo alle Quattro Fontane, and especially those of S. Agnese on Place Navona at Rome.

If the proposals of Maderna for the towers of S. Peter were doubtful additions, and that created by Bernini is designated as theatrical, the art value of the latter is thereby not questioned. The assertion that they would have injured the effect of Michelangelo's dome, or even have concealed this, is scarcely conclusive. They are placed so far from the dome, and also stand outside of the view of the small flanking domes, that injury of the mighty central dome by the towers could not be stated; already by the plan and form of the street of access and of the great elliptical Place, as well as by these heights and strong opening of the upper masses, as well as the graceful endings of these curved roofs, this is impossible (Fig. 731): the main facade with the central dome, the two side domes and the substructures of the clock and bell towers, represented on a photograph. The added lines give about the geometrical elevation, and the bell towers are represented according to the statements of C. Fontana and the drawings of Bernini).

The plan of the arrangement of the central dome, the two side domes and the towers is given in Fig. 732. Maderna utilized the towers as terminations of his vestibule and the loggia (Fig. 732), and Bernini seems to have also felt this need, when he made the unfortunate attempt to erect them. (For the form of the Place, the plan of the colonnades and the street of access, see Fig. 699, and for the plan of the Bernini towers, Fig. 734). Likewise Carlo Fontana appears to have been

convinced of the same, when he made proposals to strengthen the left side tower, that had sunk, and made them known (Fig. 732), (according to his work, "Templum Vaticanum et ipsius Origo". Rome . 1694. p. 267). He also took up the matter earnestly, before he proceeded to take down the bell tower, and a substatute was sought and found in the wretched ending with the dial plate on the attic. The feeling of a necessity of the arrangement of the towers in connection with a great dome already made itself felt in the maker of the wooden model for S. Petronio in Bologna; Peruzzi foresaw four towers in his design for S. Peter in plan and text, and the medals for S. Peter's building struck under Julius II and Leo X exhibit four towers, which extended above the height of the cornice of the dome; the still existing great wooden model of Antonio da Sangallo has four round towers, carried to an equal height with the dome, while in the design of Michelangelo according to the drawing of Duvernoy (1569), at least the flanking domes appear to extend higher, than they were built. (See Petroni-ly-Simil. The Vatican).

G. Alessi erected at the domed Church S. Carignano near Genoa the slender angle towers, which were also foreseen in the original plans, even if their height and external form were not entirely authenticated, or may be attributed to another master (Fig. 735). Bramante, A. Sangallo, Alessi and Bernini counted on towers to accompany the central dome, instead of which the architects of Mohammedan mosques place their minarets; Michelangelo declined them for the central building.

543. Crown of the Dome.

The domes, in addition to the admission of light through the windows in the drum, likewise received overhead light by means of a high lantern structure after Byzantine models, to which the Protorenaissance also employed, to which the youthful Renaissance, its advanced and latest phases remained faithful; a last echo of verticalism for the central structure.

544. Lantern Addition at the Vertex.

Simple and clear on the great domes of the Florentine Cathedral of, the Church of S. Peter in Rome, the dome of S. Maria da Carignano near Genoa and others, it appears overloaded in details with the appendages to the domes of the Roman late Renaissance and the Barocco, particularly at the Sapienza and

The Church S. Andrea delle Valle in Rome (Figs. 736, 737, 738, 739),²⁷² that also retain the plan of the dome.

Note 272. In the representation of this, also the construction of the masonry of the columnar shafts and capitals, of the architraves and cornices in bricks is also shown, as explanatory additions to Section V on brick Buildings.

545. Organic connection of Bell Towers with the Nave.

To the Early Christian custom of erecting one or two bell towers without any internal or architectural connection with the House of God, the church architects of the Renaissance in Italy also adhered at many small and large churches (Florence cathedral, S. Biagio at Montepulciano), but which did not exclude the attempts already made on this side of the Alps in the middle ages to connect organically the properly secular part of the structure with the consecrated House of God. The Barocco period particularly busied itself, as frequently mentioned in this volume, with this problem. The first proposals go back to Sebastiano Serlio (Fig. 740), who by the suggestion of a vaulted portico, that was itself enclosed between two towers, created a connection and thus allowed the facade to appear more impressive. Borromini proceeded very skilfully in his main facade of S. Agnes in Rome. The entrance facade is closed and recedes somewhat behind the towers, which themselves are again in the continuation of the line of the connecting wall, in the form of quadrants connected with them (Fig. 741) 273 (742) 274. Bernini did not need to conceal his adjacent fountain statue on the Place before the view of this facade; he had done many things no better than his rival Borromini, whom the envy and rivalry of artists drove to death.

Note 273. G. Gurlitt gives in his *Geschichte des Barockstiles in Italien* (Stuttgart, 1887. p. 393 et seq.) a peculiar text to the plan of Petrouilly of S. Agnes on Place Navone in Rome, when he says: "The nucleus of the plan of this Church forms a square, whose cut-off angles are filled by niches. To this are attached short transverse wings like a Greek cross." (Sic !). The principal merit of the church is to be attributed to Girolamo Rainaldi ... At the sides rise towers certainly designed with genius, each in two other stories with a stumpy stone spire. The refinement, by which from the lower "square" always develops the "circle" as the basis of the upper

story. Without the preliminary work of Bernini on the facade of S. Peter, this would have become impossible. (This seems probable, and I might concur in it). The towers were completed by Giovanni Maria Boretti, indeed according to the original plans. For it is not to be thought, that these come from two different "hands" --- brains certainly played no part with these men!

In the edition of the Cicerone for 1884, p. 283, Burckhardt says, that "Bernini built in Rome towers on an oval plan (S. Agnese on Place Novona), others with two convex and two concave sides (monastery of Chiesa Nuova), and also such with a spiral superstructure (Sapeanço), finitely as a manifestation of his style principles the tower of S. Andrea delle Fratte".

The author mentioned for these statements indeed regards these conditions as absurd, but which exhibit method and artistic security; Gurlitt then holds the towers of S. Agnese to be circular, Burckhardt -- Bode explains them as oval in plan. Both seem to miss the understanding of the formal treatment and the statical legitimacy of the towers mentioned.

785 Again closed with a great flight of steps placed before it is the entire facade of S. Trinita de' Monti in Rome, where the two towers are set in the same plane with the facade wall (Fig. 743). The facade has an imposing effect on the Place mentioned, and with the elevated position of the Spanish Stairs and the treatment of its large surfaces, forms a happy termination of the street leading to it.

An attempt to organically connect the bell towers with the nave was made first by Bernini at S. Peter in Rome under colossal conditions; if he also technically obtained a failure, and the impulse to this in principle is to be referred to Serlio, as is stated, yet it must be considered a great and fertile cast in the architecture of the Italian Renaissance. The decision, that they did not understand how to combine towers and nave into an architectural whole, appears untenable according to the examples shown.

789 546 Simple Bell Turrets.

Recurring to small things, some examples will be mentioned, that show how ^{with} little the architect and owner could be satisfied in affording the church bells a shelter.

288 On the little old Church of Maggia-Aurigeno is built a stone bell tower on the entrance facade with unassuming appearance; in Ragusa is the same motive, somewhat more richly treated, placed on the closed gable facade, and in Isola Marnese (near Rome) appears half concealed a massively built small square tower of stone with pointed roof, rising from the roof. (Figs. 744, 745, 746).

547. Rural Churches.

Beside these stand an entire great series of rural church buildings in Italian Switzerland at Lake Maggiore and at Lake Lugano in the Canton Tessin, that I think of treating more fully in another place. Here may be named only the charming village churches in Cevio in the Maggia valley (Fig. 747), S. Antonio and S. Francesco in Locarno (Figs. 748, 749). What they present is simple and plain architecture, picturesquely constructed, partly having domes over the crossings, with towers of rectangular plan with low hip roofs or higher octagonal spires. These are covered with metal, the other parts of the buildings with rough granite slabs, the walls plastered down to the plinth. No ornament adorns the architectural members. The masters well knew, that they would not succeed with petty external ornamental work in presence of the grand Alpine nature, and that such must be rejected in the effects.

They are mostly interiors with a single aisle, but as soon as one enters the interior, he is surprised to see how far the art design extended. Here man is with his invisible Creator, whom he desires to requite in gratitude for everything bestowed on him there, indeed in the best and most beautiful form. He decorated walls and ceilings with stucco, paintings and gilding; he will not be stingy toward the Deity, as one of the believers once assured me. He gives up the contest with mighty nature. "Shame, how appears a human work, so bad and such a black village, a heap of shingles and stones, in the midst of grand and magnificent nature! Great boulders and other stones on the roofs, so that the storm may not tear the miserable coverings from their heads! Where one only meets mankind, he might flee from them and their wretched works".

290 (Goethe, Briefe aus der Schweiz, unter Werther's Papiere gefunden. III. 1860. Of the value of the interior and its well-weighed and justified contrast to the exterior, he says noth-

nothing. And yet both will be criticized, when justified.

These works rise higher artistically in the villages, which lie on the shores of the lakes or in the hills, where they dominate areas of water, as for example in S. Maria del Sasso near Locarno (Fig. 750), near Cannobio on Lake Maggiore (Fig. 751), or the little Pilgrimage Church in Campione with its terraces and flights of steps looking down on the surface of the water (Fig. 752). The subtropical vegetation at this place combines in the most beautiful manner with the unrestricted forms of a delicately treated Barocco.

On the other hand, a chilling contrast is formed by the dry, galleries of the polygonal dome of Cannobio (Lake Maggiore), cut from granite slabs with their primitive details, still interesting in motives!

As extending somewhat outside these limits, should be mentioned the proudly rising Church in Vico Morete on the steep shore of Lake Lugano, with the tower at the side, the high dome and the gable facade adorned by statues. The building rises before the blue surface of the water and the forested shore of the lake, and can tolerate the richer architecture with this background. The interior has sculptures from the school of Amadeo.

Richer than that near Cannobio by the gallery around the dome is treated the one in Brissago, whose small columns and capitals are rude and simple, entirely connected by round arches, likewise roughly constructed of gray granite. (1576).

548. Internal Decoration.

As an example of internal ornamentation may be mentioned the little Church near Maggia-Aurigeno given in Fig. 744, represented in Fig. 754. One figure on the wall of the choir bears the date of 1416, and elsewhere are given dates of 1527, 1528. The width of the aisle amounts to 22.0 ft., its height to the beam ceiling being 15.7 ft. Very notable is the mural ornamentation of the little Pilgrimage Church near Campione, (Fig. 752), the splendidly executed paintings in the dome, on the walls of the building of a single story, and those contained by the adjacent vestibule accessible from the land side. For the mural paintings in the interior the figures are partly made in low relief in stucco and then painted.

549. Sacred Precincts.

549. Sacred Precincts.

To these rural churches must accordingly be added those of the sacred precincts. By these are to be understood the small appropriate structures on church lands, the field and wayside chapels and certain cemetery buildings on consecrated ground, which in many cases present something charming with the use of small means, and also artistically perfected, as again found so frequently in Canton Tessin, in Lombardy and other rural domains. Here still remains a broad domain for research. The architecture of the Renaissance in Italy does not consist entirely of palaces and cathedrals, but also smaller architectural problems are taken up and studied with enthusiasm, for which may be mentioned as examples the Sacri Monti (Holy Mountains) on the southern slope of the Alps near Vassallo, Orta and Varese, and the Wayside Chapel on the road from Locarno to Ronco. ²⁷⁵

Note 27. On the different small buildings also see Rohn, D.B. Kunst- und Wanderstudien aus der Schweiz. New edition. 1888. Wanderings in Tessin. p. 110 - 219. -- Very beautiful and worth reading.

Samuel Butler treated these in 1890 and 1894, also a doctoral dissertation by P. Goldhardt of the Polytechnic School in Dresden was devoted to the subject in 1908, and particularly the excursion sketches to the lakes of upper Italy by the students of the Polytechnic School in Darmstadt under Professor Vetterlein (1911) furnished a beautiful addition to it. The general plan of the Sacro Monte at Orta (Pl. 18 of the Darmstadt sketches) and Fig. 755 after that affords an idea of the form and location of the separate structures, also Figs. 756, 757, 758 (after Dr. Vetterlein) give the plan and views of two chapels, rectangular and circular, both surrounded by porticos. (Figs. 756, 758). The average clear width of the interiors are 16.4 to 19.7 ft., they exhibit simple and even splendid development of the exterior, being very interesting little buildings. Also beautiful among them is a well house, whose pointed roof is supported by 8 Doric columns, covering the draw well.

550. Crossing Towers.

With the adoption of the Latin cross as the ground form of the church, in the elevation the crossing of the nave and transepts was plain, as a rule, or architecturally emphasized

prominently by a domed structure. In all dimensions and forms, with and without drum, with steep and with flat outlines, the dome characterized the intersection mentioned, so that the structure dominated the entire mass of the building, or this was animated by it in only a slight degree. The Renaissance in upper Italy even chose a different means for the same purpose, taking up again a mediaeval motive, the crossing tower, as for example on the Cathedral of Milan as actually executed, the Church in Chiaravalle, the Certosa near Pavia, and in Città di Castello; beautiful in form and an interesting work, that likewise in structural respects must also be termed instructive and worthy of consideration, even if all structural considerations are not emphasized therein. The four supporting piers of the tower consist of two detached columns constructed of high ashlar with few horizontal joints, and of two walls at right angles, of bricks faced with ashlar. The effects on these dissimilar supports, that have to support the tower in common, must be irregular and produce dissimilar movements in the upper vaults, arches and enclosing walls, that cannot remain without effect. The great art work was not further repeated, but it yet remains in spite of its defects. In the sixties of the last century (1866), the tower was scaffolded for repairs, and could not be ascended, but now a special permit is necessary for ascending it.

Figs. 759, 760 exhibit the architectural subdivision and afford conclusions on construction after Durelli, G. F. La Certosa di Pavia. Milan. 1863. (Also see Luca Beltrami, La Certosa di Pavia. Milan. 1895, and the very much simpler treatment of the tower in Città di Castello).

551. Sacristies.

Further, later enclosures or additions, frequently on the north side of the church, but regularly located in the vicinity of the high altar, are the sacristies, that were intended for the use of the clergy, for the preservation of the church vestments, treasures and library. After the 13th century they were also furnished with altars, and were employed as oratories. They frequently form in the Renaissance splendidly constructed and decorated parts of the church, as shown by those in S. Lorenzo (1426) and S. Spirito (1496) in Florence,²⁷⁶ which were erected as charming little central buildings, to

with which are connected the names of the celebrated artists, Giuliano da Sangallo, Cronaca, Sansovino and Brunellesco.

Note 276. Also see Lospeyres. Pl. X.

One of the most extensive designs, must be the new sacristy building of G. Marchioni in S. Peter at Rome (1776-1780), connected with the church by two corridors, receiving in a domed room 49.2 ft. wide the common sacristy, adjoined by 15 subordinate rooms. ²⁷⁷

Note 277. See the ground plan in Detorouilly-Simil, Vol. II, Pl. 564.

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Apply the same criteria as in the case of the other buildings. The same criteria apply to the interior and exterior. Only the exterior is visible from the street. The interior is visible from the street only through the glass doors. The interior is visible from the street only through the glass doors. The interior is visible from the street only through the glass doors.

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As for the interior, we must have determined different criteria. The interior is visible from the street only through the glass doors. The interior is visible from the street only through the glass doors. The interior is visible from the street only through the glass doors. The interior is visible from the street only through the glass doors. The interior is visible from the street only through the glass doors.

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801
502 Section XXIII. Single-aisled and Basilican Plans, Treatment of Exteriors and Interiors, with Examples from different Periods.

552. Influence of Early Christian Architecture.

Early Christian church architecture gives as the external architecture the masonry masses materially necessary for enclosing the interior and nothing more. Only the entrance facade receives a richer development, even mosaic ornamentation, as for example on the Cathedral in Porenzo, etc., while the sides and the choir remain in rough construction.

553. Protorenaissance.

The Protorenaissance also proceeded in the same manner at S. Miniato al Monte in Florence. On the contrary the Romanesque and Gothic middle ages extended the architectural members over the entire exterior, even developing a maximum richness on the choir and the sides.

554. Antique and Mediaeval Influences.

As for the palaces, we must here determine different currents, which were influential for the treatment of exteriors. There likewise antique and mediaeval elements are connected with them; the mediaeval system is frequently retained, then clothed with Renaissance forms. (Interiors of S. Maria della Catena in Palermo and S. Francesco in Rimini -- pointed arches on pilasters with broken entablatures and antique mouldings); timidly and gropingly, men attempted to make the antique answer, until they believed they had found in the architectural arrangement of the Roman triumphal arch the proper means of expression for the main facade of the Renaissance church.

555. Antique Tendency.

The antique tendency is followed in a still hesitating way by the little Brotherhood Church dell'Oca in Siena, ²⁷⁸ the Church S. Pietro in Montorio (Fig. 761), and by S. Agostino with basilican plan (Fig. 762), both in Rome. The cornices, doorways and engaged pilasters were also still restricted in details and proportions, but otherwise employed with intelligence, the mediaeval rose window still retaining its rights, until the Renaissance in the facade of S. Andrea in Mantua (Fig. 763, with plan in Fig. 764), freed itself from every reminiscence of the just ended art period. In a yet higher degree did this occur on the principal front of S. Giorgio M

Maggiore in Venice, where in place of the precise proportions and of the gabled form of S. Andrea appear the proportions and forms of the antique Roman temple of the perfected style. The later time broke with the colossal order on the wall surfaces, and took up the two story form of facade, first indeed allowed by the need of an elevated loggia for dispensing the blessing -- *Urbi et Orbi* -- as at S. Maria Maggiore, the Church of the Lateran, S. Marco and S. Apostoli, All in Rome. S. Peter makes an exception here, where the two stories are found within the retained colossal order.

Note 278. See Geymüller. *Francesco di Duccio del Gusto*. Pl. 1

It is of particular interest, as for the small single-aisled church facades, to find the mediaeval forms gradually crumbling away and the antique appearing in their places. S. Maria degli Angeli in Siena (Fig. 765),²⁷⁹ S. Felice in Florence, (Fig. 766),²⁸⁰ S. Maria delle Nevi (Fig. 767),²⁷⁹ S. Caterina in Siena (Fig. 768),²⁸¹ and the chapel of Palace Turchi at the same place (Fig. 769),²⁸¹ afford a fine series of steps for the principle. On the facade of the little Church degli angeli we still find the steep gable, the steep hip roof, the projections at the angles, and between these being the ornamental Renaissance portals. On S. Felice in Florence already more advanced concessions are made to the new style, and on S. Caterina is expressed the completed closed Renaissance. To the main facades adorned by gables adjoin the simpler side facades, with a continuation of the horizontal members accentuated there, with a regular distribution of the window axes. Blind arcades like the antique with pilasters animate the windowless walls of the side aisles; for the clearstory, men have been restricted to the arrangement of slender semicircular-headed window openings without other accessories. Architrave, frieze and cornice terminate the ascending walls in both cases; in the latter appear short consoles in place of pilasters, as if affording points of support for the architrave (Fig. 772)²⁸³: (view of the side facade of S. Lorenzo in Florence).

Note 279. Lospeyres. *Churches of the Renaissance in Italy*. Pl. 26.

Note 280. The Same. Pl. 12.

Note 281. The Same. Pl. 25

Note 282. The Same. Pl. 31.

Note 283. The same. Pl. 6.

As Alberti in his palaces arranged the small orders in stories above each other, like the Roman theatre facades, he attempted to carry out the same idea on the entrance facade of S. Francesco in Rimini, judging from the existing remains and the medal of Matteo de' basti (1450), (Fig. 771), but he abandoned it again at S. Andrea in Mantua. He was followed by his colleague B. Rossellino at the cathedral in Pienza (Fig. 770). The Barocco period again preferred the smaller subdivision of the height, as shown on S. Alessandro in Milan, S. Trinita in Florence, Church degli Scalzi in Venice, S. Vincenzo ed Anastasio, S. Maria in Compitello, S. Maria della Pace, and particularly Church Gesu in Rome. Likewise on the Gothic substructure of S. Maria Novella in Florence, Alberti knew how to add nothing else than a subdivision by small pilasters with an antique temple pediment. (Represented in Müntz. Vol. I. p. 407)..

556. Facade Forms of Basilican Plans.

For the basilican plan always presented itself a difficulty in the front elevation; the junction of the low roofs of the side aisles with the elevated clearstory. Men had to choose between the solution of the Early Christian basilica, which strictly speaking is no satisfactory architectural solution, or to extend the side aisles across the gable facade in form of a vestibule, when the vestibule has the same shed roof as the side aisles, or to allow the enclosing walls of the shed roof to abut against the gable wall of the middle aisle, just as the inclination of the roof required or allowed. Examples are-- S. Crisogono (Pl. 42),²⁸⁵ S. Maria in Domnica, Basilica Liberiana (Pl. 61)²⁸⁵ S. Giovanni Laterano (Pl. 70)²⁸⁵ S. Paolo (Pl. 80),²⁸⁵ Basilica Vaticano (Pl. 75),²⁸⁵ and Basilica Ostiense (Pl. 82),²⁸⁵, where the Roman half pediment appeared, or the quadrant form for curved roofs. Men could also attempt something new.

Note 285. Conino, L. Recherche sull' Architettura piu propria dei Tempi Christiani. Rome. 1846).

557. Connecting the Pediment Breaks.

Alberti chose the last way, which also is found in the last phase of the Renaissance, while Palladio adhered to the Roman model. (Fig. 773). The first artists of the Renaissance placed the volute before the shed roof, elsewhere a transition

form on a small scale, here becoming a great one. To make this form more endurable at a great scale, he enlivened the outline by a fine ornamented incrustation, and thus created a classical model on S. Maria Novella in Florence (Fig. 774). This was later transformed into relief, sometimes swelling, sometimes recessed (Fig. 775), extending far horizontally or vertically the favorite motive of the following and especially of the later time, frequently offending against good taste, even increasing to ugliness, and frequently lowering the other details. (Fig. 776, facade of Church Gesù). On account of their lack of taste, the volutes are suppressed in the following representations of the facades so chastely designed otherwise, with reference to the facade of S. Francesco al Monte near Florence, where for the clearstory the like arrangement is retained without volutes. Very much more moderately and beautifully did Serlio treat the transition to the side aisles in his church design (Fig. 777).

558. Aim and Reality.

It must still be said, that with great purposes, the execution of facades on the most important churches remains incomplete. Not a single important one is there by Brunellesco, Michelozzo, Rossellino (if his Cathedral in Pienza be excepted), Cronaca and the two elder Sangallos. What Giuliano designed for the facade of S. Lorenzo in Florence,²⁸⁶ (4 designs), can scarcely be satisfactory. They are even disconnected pieces of decoration, behind which something else might stand just as well as a church. One would scarcely wish to seek a basilican design behind them; an attempt to solve the conflict between the junction of the shed roofs of the low side aisles with the elevated middle aisle has properly gone out of the way. The side facades, so far as their arrangement does not come from the mediaeval period (for example on the cathedral in Como), remain simple and plain, as the basilicas of Brunellesco show. Without any subdivision of the wall by piers or columns, window succeeds window with regular distances between axes. If architraves extend along the cornices, they project but little beyond the wall surfaces as at S. Spirito, or at certain intervals, as stated, they are supported by flat consoles, as on S. Lorenzo in Florence.

There is indeed best expressed what the masters of the early

time desired; simple and yet dignified in proportions with the avoidance of all useless or merely ornamental additions.

870
871 We see circular windows in the walls of side aisles, tall round-arched ones in the high walls of the middle aisle, and a subdivision by blind arches and pilasters for the external walls of the circlet of chapels (Fig. 772).²⁸³ The side facades of church dell' Osservanza in Siena have yet only some small round windows (oxeyes) as the sole architectural members besides the console cornice.

559. Mediaeval Tendency.

872 The facade forms still influenced by the middle ages throughout exhibit somewhat more warmth, and stand near the design of northerners in the matter of church architecture. How far it is here influenced by the power of custom, by instruction and impression in youth, and how far there remains to it an objective decision, we shall leave without examination. The facts must remain undisputed; we have preferred also to gain these customs by repeated visits and studies of Italian art monuments, rather than refer to them by increasing knowledge of the innate nature of the Renaissance. And whoever desires to advance church architecture today in the style of the Italian Renaissance, will labor more happily and successfully, if he adheres to these productions, than to the works of the latter time, that have been hunted to death. There are to be created still new things filled with life, but nothing in the latter.

560. Oratorios and Chapels.

And just the smaller Houses of God, oratorios and chapels are those in which things most full of charm are created; for they become "magnificent portals" with their overrich use of ornamental motives, figure decoration and finely executed delicate subdivision. The Confraternita dei Laici in Arezzo,²⁸¹ S. Bernardino in Perugia (built 1461), the small red brick facade of S. Spirito in Bologna, the Madonna di Galliera in Bologna,²⁸⁸ may testify for this. compare in this sense the Memorial Chapel of S. Andrea before Gate del Popolo near Rome (Figs. 778, 779) with the Oratory of S. Spirito in Bologna and the little Chapel near Ragusa -- which is the more capable of development, or has the most spirit?

Note 288. Zeits. f. Bauw. 1864. p.22.

But how strongly work on a great scale was performed, the facade of the Certosa near Pavia proves! "Its motive is independent of the antique orders, and is the Romanesque-Lombard stepped church front with projecting piers and transverse arched gallery; within these fixed forms is sheltered all conceivable richness in wise gradation of the expression. The facade stands there without any analogy, world-famous by its outside ornamentation, and aside from this perhaps the best conceived of the 15th century." -- Thus Burckhardt, after he realized, that he had changed his earlier unjust opinion after repeated visits to the building.

Note 289. Willich, H. Kirchenbauten von Giacomo Borozzi de Vignolo. Fig. 15. S. Andrea on Via Flaminia at Rome.

Note 290. Burckhardt, J. Der Sicerone. Bosle. 1860. p. 120, 121.

The facade is unfinished in the upper parts, the front termination next being wanting (Fig. 780). F. Malaguzzi Valerii published in his book on G. A. Amadeo (Scultore e Architetto Lombardi, 1447-1522, Bergamo, 1904) on p. 154 a general view of the Certosa "from an engraving". According to this the facade terminates in a low gable comprising the three middle bays. On a fresco of Borgogne the question is solved otherwise, when there only the middle bay shows entire gables, the adjacent bays having half gables. The entire gable shows an arrangement, that recalls the gable of the Oratory of S. Spirito in Bologna.

561. Facades with special Forms of Roofs.

As a third group are to be mentioned a number of church facades, indeed proceeding from Venice, on which the form of their roof is also expressed externally, indeed as correctly as could ever be desired; there the roof of the middle aisle is semicircular or shows the form of the inverted stern of a ship, while the roofs of the side aisles have the quadrant form. The antique gable and shed roofs are abandoned, a form being chosen instead, which also public secular buildings of the early and late period of the Renaissance exhibit. (Palace del Consiglio in Padua, Palace del Comune in Brescia, called the Loggia, Basilica in Vicenza).

Magnificent is the adoption of the idea, and still more in-

interesting became its embodiment by the peculiarity of the roof construction on the Cathedral in Sebenico (Dalmatia). What this is, is likewise expressed in the facade. Begun as Gothic, carried on and completed in the Renaissance style, built of white limestone without a bit of wood! The main and side facades still show Gothic portals, windows and cornices, and the choir windows have a pretty combination of Gothic tracery and Renaissance mullions. A work complete in itself, that deserves the highest estimation. (Figs. 781, 782, 783).

In this group, even if not purely included in the facade system, are to be placed the little churches in Ragusa and in Lonigo near Verona (Figs. 784, 785), also conditionally S. @ Giovanni in Monte at Bologna with the motive of semicircular and quadrant gables in the driest conceivable forms (the 13th, and 14th and 16th centuries were busied in this).²⁹¹ Likewise this group might be further developed with advantage.

Note 291. An illustration of this structure is found in Holczuzzi-Veleri, p. 74.

814 562 Structural Material of Facades.

Just as for palaces and for public secular buildings, for these facades was employed as building material the crystalline and the ordinary limestone, in Rome probably travertine, (S. Maria Maggiore, S. Peter, S. Maria del Popolo, etc.), in Tuscany sandstone wrought by the stonecutter, rubbed or hammered, also covered by stucco, as for S. Spirito in Florence, in Genoa at S. Maria da Carignano and at the Steccata in Parma. In monochrome and polychrome execution, bricks and ornamented terra cotta were used in entire upper Italy, in Bologna down to Siena (S. Maria della Grazie in Milan, Certosa near Pavia, S. Caterina in Siena, etc.), then marble facing on the magnificent churches of Venice and Genoa, likewise mosaic in Florence and other places (S. Miniato near Florence).

563. Structural Details.

The arrangement and general development of the plinth, portal, window and cornice determine the richness and effect of facades, the alternative effect of openings and masses, the severity of a more ornamental exterior of the building.

564. Forms of Plinth.

According to the expenditure for the facades is also arranged the form of the plinth, passing from the simplest to the

richest as for secular buildings. Without particular emphasis on this is built the story masonry on S. Francesco near Florence, as a simple plinth without transition moulding on S. L. Borenzo and S. Felice there. Like a pedestal, on account of the subdivision of the facade wall by columns and piers, is the plinth constructed on S. Maria Novella in Florence, S. Maria degli Angeli in Venice, S. Paulina in Lucca, and in three parts with base, die and cap on S. Maria de' Miracoli in Castel Rigone (Umbria).

As bench seats, just as for Tuscan palaces, we find the plinth at S. Maria delle Carceri in Prato, Madonna di S. Biagio in Montepulciano, with a triple division above it at the Church della Madonna in Mongiovino, and as vertical ashlar with decorated terminal band on S. Francesco in Rimini.

817 The plinth of the facade of the Certosa near Pavia is without a model or imitation, for only once in the world is such richness executed. It comprises a base adorned by little pilasters, whose intervals are filled by medallions of Roman emperors, above this being an addition with reliefs from Biblical history, enclosed within decorated frames with angle medallions between magnificent pilasters. (Fig. 786).²⁹²

820 Note 292. From Durelli, G. & F. la Certosa di Pavia. Milan. 1863.

822 565. Forms of Portals.

Beginning with the richest form of a principal entrance, the portal of the same Certosa is to be mentioned in the first place; coupled columns bear an antique entablature, above which rises an arch enclosed within a square and with tympanum adorned by figures (Fig. 787),²⁹² Then follow the magnificent portal of the cathedral in Como, where the internal and the external sides of the southern entrance gateway are arranged with coupled pilasters between niches with figures, over these being a richly decorated antique entablature, spanned by a triply subdivided round arch, the middle one being radially divided and showing relief ornamentation by figures, while the reliefs in the tympanum have the Flight into Egypt as a subject. The arches are enclosed by rectangles, and over these is constructed an antique pediment, that exhibits the figure of the Saviour surrounded by angels' heads. more simply is treated the interior, where it is only noted, that these the

shafts of the pilasters are divided into three panels, decorated by shallow niches with figures. An excess of richness by candelabra columns with high pedestals, luxuriant figure ornamentation, with a shrine containing a Madonna statue surrounded by angels and cupids, is shown by the western portal of the Cathedral, a composition that perhaps may be criticized architecturally, but one of the most precious creations of the early Renaissance in upper Italy. What a wealth and charm of motives, what wonderful execution, to which the Certosa near Pavia even cannot oppose anything better! ²⁹³ The portal of the left side facade (1505-1507) was by Tomaso and Giacomo R. Rodari.

Note 293. See illustrations thereof in Sesto Monti, Pls. 12 - 17, further in Borelli, Pls. 16, 17-20.

Another precious gift of the early Renaissance is the interesting conception of the middle entrance to S. Maria de' Miracoli in Brescia (1500-1535), a design only explained by the special purpose of the building. Four detached columns form a sort of portico, that bears a richly ornamented and closed upper structure; this may be regarded as a "stone reliquary casket", beneath which the entrance to the interior appears. "Ornamental and gleaming with its inexhaustible wealth of detail projects the middle portion of the facade", charming the observer and allowing him to forget the inorganic entirety. ²⁹⁴

Note 294. See Meyer, Part II, p. 225 et seq.

As another magnificent piece must be named the portal of S. Maria Maggiore in Bergamo. The columns flanking the entrance support widely projecting ornamental consoles, on which rests a semicircular tunnel vault with coffers, again enclosed in part by a rectangle. This upper projection affords increased protection to the tympanum and to visitors of the church in bad weather.

The Tuscan and Roman churches of the early time are satisfied by a simpler treatment, when they reject the excess of ornamental decoration, and accept square piers instead of columns, but which then again also bear an antique entablature with arched roof and tympanum. (Portal of S. Maria della Quercia near Bagnaja, Fig. 738). The square pier yields to the Corinthian pilaster with low relief, retaining the other ornamental accessories, at the entrance portal of the portico

... person in Rome (1750), and in the latter (1750), ...
(1750), where above the entrance is still a ...
... like an attic, crowned by a vacant semicircular ...
... and side ...

... and ...
... and ...
... as also shown by the entire, ...
... the ...

... on the different ... and the illustrations in ...
(1750).

... directly ... the entrance ... on early ...
... in ... and ... as ... with ...
... on ... as ... in ... and ...
... in ... a ... and a ...
... on the ... there are ... a ...
... and two ...
... (1750, ...).

... with ... broken and ...
... and ... over ...
... and ... are to be ...
... in ... in ...
... in ... and many others.

... Door Leaves of Wood and of Bronze.
... were closed by ...
... as for example on ...
... and in the same ...
... with ... and with ...
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... of ...

... are still preserved to us in the old ...
... the most ...

of S. Marco in Rome (Fig. 789), and in the Badia near Fiesole (Fig. 790), where above the entablature is still arranged an addition like an attic, crowned by a vacant semicircle with angle and side acroterias.

824
825
826 The last examples show, particularly the Badia portal, original and masterly treated mouldings, which permit an architect of the first rank to be recognized without difficulty as designer, as also shown by the entire, dignified and noble upper portion with wonderfully beautiful proportions.

How brick architecture solved the same problem may be seen on the different structures and the illustrations in Chapter V. (Fig. 79).

Most simply appear the entrance portals on early church buildings in Siena and Rome as plain doorways with horizontal or regular caps, as at S. Pietro in Montorio and S. Agostino in Rome. A doorway with columns and a pointed cap is shown by S. Salvatore in Ragusa. In the arrangement of these entrance doorways on the main facade, there are usually a larger middle doorway and two smaller similarly treated side doorways. (Cathedral in Lugano, etc.).

Portals with columns, broken and curved pediments, with cartouches and sculpture over and between them, belong to the Barocco period, and here as examples are to be named S. Gregorio in Messina, S. Maria in Campitelli at Rome, S. Maria da Carignano in Genoa, and many others.

566. Door Leaves of Wood and of Bronze.

The doorway openings were closed by simple paneled folding doors, mostly made of larch wood, or even by coffered leaves with carved framework, as for example on Chapel Colleoni in Bergamo, and in the same manner on the Baptistery and Cathedral in Parma; on the latter the principal and side doors are made with rosettes in the panels and with bronze nails at the intersections of the framework; high above on a cross piece is incised 1494. "Luchinus Blachinus of Parma made it." Magnificent wooden doors are also to be found on Chapel Pazzi in Florence.

Bronze doors adorned by reliefs, to which reference has already been made, are still preserved to us in the old sacristy of S. Lorenzo in Florence: the most wonderful, shutting into bronze frames, remain for all time those of Lorenzo and

Vittorio Ghiberti on the Baptistery at Florence, by which the fame of Andrea Pisano (1336), who furnished the first bronze doors, for the same building should not be lessened. On these are animated compositions in relief in quatrefoil panels; on the others are rectangular panels, which enclose the figure representations. Lorenzo Ghiberti executed in 1403-1424 one folding pair, and in 1425-1452 the other pair, while Vittorio, son of Lorenzo prepared the enclosure of the door by Pisani (1442-1462); they remain a wonderful work of art, and of the great Florentine master, it was not saying too much, that they were worthy to adorn the gates of paradise. The jambs of the doorways have low ornament on the surfaces, on the front having garlands of fruits, birds and heads, full and undercut work, "yet as natural as if the cast were made from the object itself." The surfaces of the doors were once entirely gilded; vestiges thereof still abundantly exist, which now with the patina of the bronze have a charming effect, and correspond more to our modern taste than the original condition.

Likewise Filarete's bronze doors of the great middle portal of S. Peter (1439-1445) must not be forgotten here, even if they do not attain the power and charm of those of Ghiberti.

What Pope Eugene IV had executed on the first church building of Catholic Christendom was surpassed by Florence. 296

Note 296. On the worth of this work also see Meyer. Vol. I. p. 82.

The bronze doors on the Cathedral in Pisa (Fig. 922) from the school of Giovanni da Bologna are likewise magnificent works of the first rank. They were made in the time from 1598 to 1602 by G. Baccini, Angelo Serani and Gaspare Mola. (See J. Lupino in *Italian Artistica*, No. 16). Good Renaissance works are also the three entrance doors and the portal del Santo Camino of Basilica Santa Casa at Loreto.

567. Forms of Windows.

The windows of the middle and side aisles are formed as plain round openings or as richer rose windows with radial bars (Rome, Sebenico, Ragusa, Florence), and besides these occur the tall and narrow forms with semicircular heads, quite in the mediaeval sense, or they are rectangular, and in the late time are also segmental. The architraves then have the simplest mouldings, which again give place to very rich forms.

The transition style exhibits the rectangular form; the lin-

lintel is supported by a small slender Tuscan column: among the former are found two coupled round-headed windows with mediaeval tracery. (Window in choir in Cathedral in Sebenico, Fig. 791). The early Renaissance shows a rich example of another rectangular window (Chapel Colleoni in Bergamo, Fig. 792) with a great use of pilasters, fluted and twisted little columns and candelabras, detached figures and medallions. The employment of variegated kinds of marble and overloading with ornamental forms give the windows a rather secular character, but which is again softened by the peculiar closing of the opening for light by little columns set closely together.

Also here it is again the Certosa near Pavia, that presents the highest, yet with clear and good proportions. The slender and high double windows, whose arches are borne by candelabra columns, are enclosed by a rectangular architrave, and this again by another wider one, that is crowned by a frieze and cap with the richest sculpture; on the cornice lie dragons with coiled tails or volutes, on which rest female figures, or which garland an interposed candelabra. The whole rises from a background of square panels with medallions and shields of arms -- the proudest ever created by the decorative sculpture of upper Italy on an architectural member! (Figs. 793, 794). 292

Similarly, the master of the Cathedral in Como has not avoided any means for making important its windows, Romanesque in general form with splayed jambs ornamented by pilasters and gable, while again the Tuscan columns continue so plain and simple in the architraves of windows, as only possible to them; (also see S. Annunziata in Arezzo, S. Spirito in Florence and Fig. 795)..

The Barocco style employed broader windows and gave them enclosures, that differ but little from those of contemporary palace windows. (Fig. 795).

A representation of the mode of enclosing a large wheel window of the later time is given by the Cathedral at Lugano. (Fig. 796).

Early Christian architecture was friendly to light in church interiors; men loved light rooms. The admission of light in Rome occurred in a dignified and beautiful way through the clearstory windows, while in Ravenna the side aisles and apses

also received windows for light, which was connected with the position of the altar at west or east, as stated, the Roman Christians placing it opposite the west, those of Ravenna at the west.

During the middle ages men obstructed the daylight also in Italy by dark and colored window roundels. The Renaissance could not employ these on account of the richly colored decoration of the mural and ceiling painters, and satisfied itself with white plane glass or roundels, which were arranged in pleasing patterns in leads. Clear and beautiful daylight; all mystical effects are excluded!

568. Glazing the Window Openings.

The closing of window openings with glass was known to the Early Christian period as well as to antiquity, but the use was limited to perforated stone slabs and wooden lattices, transparent gypsum and gypsum spar (gypsum windows) must serve as a substitute for it. The Protorenaissance utilized in the choir of S. Miniato still thinner polished white marble slabs for filling windows, which allow a warm yellow light to fall into the interior in a charming way in the morning, when the sun is still low. Similar arrangements are in the Cathedral at Orvieto.

Tasteful patterns of leading were further common in the centuries preceding the Renaissance; men also preferred those with small roundels, which were already mentioned on Reichenau under Abbot Linthar (934-949) as closing the church windows.²⁹⁷

Note 297. See Geiges, F. *Der Alte Fensterschmuck des Freiburger Münsters*. Freiburg. 1902. p. 30.

The window of a passage in the Certosa near Florence still possesses painted panes, bright colored paintings on transparent glass, allied in composition and coloring to those in the Laurenziana in Florence. The last side chapel of S. Maria Novella in Florence, on the left of the choir and of the person entering, likewise possesses still two windows with paintings on transparent glass, which bear the Medici shield; on this occur the five red balls on a yellow ground and yellow crosses on a blue ground. The chapel directly beside the choir and at the left still shows vestiges of an original though simple Renaissance glazing. The same church has in the round windows of the clearstory if the middle aisle roundels of white glass

with inserted arms in white and colored glass at their centres. In the transept the wheel window exhibits the disks arranged like scales. As precious colored windows are also to be mentioned those in the side chapels of the Certosa near Pavia.

733 S. Lorenzo in Florence has moderately large rectangular panes of ordinary white glass, while the round windows in the choir of the sacristy exhibits panes with a colored round piece. The windows of the famous Medici chapel in S. Lorenzo are each closed by six simple white panes. In S. Spirito at Florence, the windows are likewise filled with white glass of rectangular form (68 panes for each window), and bear in the middle space a brightly colored medallion (eagle with bright border, Fig. 795). A small window over the altar of a side chapel is darkly glazed for about one-half with bright arms supported by cupids; but above this again follow panes with leading of good design.

A window of Maddelena de'Pazzi in Florence, side chapel at the left, is enclosed by a bright narrow border, and it has white mother-of-pearl disks, bright horned apes, in the middle being a colored medallion with arms (lion and boar as supporters), on the other hand another shows a figure composition.

569. Treatment of the Entablature.

The entablature mostly bears the antique character, and accordingly consists of architrave, frieze and cornice, more or less richly treated in details. The architrave is in several bands, the frieze plain or also adorned by rounds and festoons; the cornices only have on the projecting slab crowning and supporting members, or are beset by egg mouldings, dentils and consoles, agreeing with the normal antique corinthian cornice, as is the case on the chapel of Palace Turchi, the Churches of S. Caterina and S. Maria delle Nesi in Siena.

734 The Church Osservanza in Siena has a simple console cornice without frieze and architrave, the Cathedral in Como the richest membering with echinus moulding, dentils and consoles.

S. Lorenzo in Florence exhibits the dignified and simple design without the use of decorated ornamental members, the main cornice being without dentils and consoles. The forms of the main cornices on two of the mightiest churches, of the Certosa near Pavia and of S. Peter at Rome, the one of brick and the other of cut stone (travertine) are given in Fig. 797.

The same course also prevails for the pediment cornices, as shown by S. Agostino in Rome and S. Giorgio in Venice.

570. Treatment and Effect of Interiors.

The treatment and effect of the interiors is first compelled by the arrangement of the plan, then being dependent on the use of one or more aisles, then on the form of the ceiling, and finally on the subdivision of the walls. That the arrangement of the windows, their size and mode of closure, the kind of monumental painting and sculpture have had an important influence, was previously stated. The architectural structure must give an elevated impression; that the magnificence depends on the costliness of the materials and the nature of the ornamental equipment of the interior in its entirety.

The most splendid results were sought here by the Renaissance, and they were also obtained, as shown by the Certosa near Pavia, S. Peter and the great basilicas in Rome, distinguished by noble design. An excess of the finest structural materials, of marble and noble metals, stucco and painting, with the highest development of splendor, is exhibited by the interiors of the churches of the Barocco style. (See the Church Gesu in Rome and the churches of southern Italy in their frequently offensive obtrusiveness.)

571. Ceilings and visible Framework of Roofs.

With the so-called open framework of the roof as a ceiling, but with varied painting thereon, the Protorenaissance was satisfied in S. Miniato near Florence, and without this the early Renaissance in S. Francesco al Monte near Florence and S. Francesco in Rimini. (Figs. 798, 799).

This was followed by the horizontal paneled ceiling of wood, after antique models of the good old time, with square or rectangular panels with framework intersecting at right angles, the crossings having rosettes. The two most beautiful examples of this kind must be that of S. Marco dei Dolci (1467-1471), in S. Marco, (see the adjacent Plate VIII) and that executed 835 by Giuliano da Sangallo ²⁹⁸ in S. Maria Maggio at Rome. The former is kept in blue, violet and gold, the latter is in white and gold with "wise moderate richness of golden ornaments on a white ground, that one seldom finds elsewhere."

Note 298. Vosort describes the ceiling to Antonio. -- In the May number of 1892, the *Proseeno d'Arte*, it is sought to

establish Albert as the master thereof.

A very magnificent work in this sense is also the yet strongly subdivided ceiling of the Cathedral in Pisa from the end of the 16th century. (See Plate V). A coffered ceiling of the early period, painted white on a blue ground (1497, by Pier' Antonio dell Abbate), is well preserved in the upper story of the School del Santo in Padua.

From the principle of the division into coffers of the preceding construction of beam ceilings deviate the wooden ceilings of the later period, a capricious subdivision without a any organic connection with the interior -- a play of polygons, rounds, elongated painted panels and the like -- replaced the organically subdivided old form. All these ceilings are left in the natural wood, or are brightly painted.

"With happily combined architectural and plant richness" is to be mentioned the first kind of well carved ceiling of the Badia in Florence (1625, executed by Segaloni), and among those colored, that of the Annunziata by Giro Ferri, and as a varied and Barocco work the gilded ceiling in S. Apollonia in Florence. As likewise already degenerate is to be named "as a free piece of magnificence" the ceiling of S. Stefano de' Cavalieri in Pisa, constructed after 1600, and as a work of about 1550 the paneled ceiling of the Church S. Pietro in Perugia is worthy of mention, and as a beautiful piece of "wooden vaulting" the ceiling in the right side aisle of S. Giacomo dell'Orte in Venice.

The most stately and magnificent paneled ceilings are presented by the Roman Barocco with its frequently eccentric panels, on which in addition to the rich use of gold are employed the colors blue, red, green and white. Most were constructed about 1600, and among these the most magnificent is that in S. Maria Trastevere at Rome. Others are to be found in S. Crisogono, S. Cesareo, Araceli, in the Lateran, in S. Agnes w-t-W, etc. Many of these were also restored in the last centuries in the ancient coloring.

Vaulted stone and horizontal wooden ceilings are constructed in the interiors of the great basilicas of Brunellesco, in S. Lorenzo and S. Spirito in Florence, where the middle aisle shows the horizontal covering, while the side aisles and the crossings are vaulted, the latter in the form of moderately

developed domes. (Interior of S. Spirito, Fig. 800 ²⁹⁹ and of S. Lorenzo, Fig. 801 ²⁸³ in Florence).

Note 299. Lospeyres. Kirchen der Renaissance in Italien. Pl. VII.

Complete vaults in all parts are shown to us in the already mentioned churches of the transition style among others:-- S. Maria della Gattena in Palermo, the Cathedral in Sebenico, and from the early Renaissance the cathedral in Como, as well as on S. Andrea in Mantua. In the latter Alberti employed the coffered tunnel vault, which then remained, with and without intersecting compartments, a preferred motive of the late Renaissance. (See S. Giorgio in Venice, S. Domenico in Bologna and S. Peter in Rome, Figs. 805, 806).

The sole very essential influence on the form of Renaissance vaults was maintained by the antique, whose mighty works in the domain of the art of vaulting were still preserved to a greater extent than today, particularly in the great structures of the Baths.

The middle ages could present little under such conditions of the Renaissance; it felt itself by the greater structural undertakings attracted far more strongly attracted to the antique, and it rather held itself with a tendency opposed to the presumed attainments of the period first named. In this sense is the antipathy of the Renaissance to the cross vault characteristic, and which Baccio Pintelli (1580) still employed in his churches, but without ribs. "Dolabueno was the last, that produced a light and noble effect with ribs and oblong cross vaults," indeed in Monastery Maggiore at Milan. In S. Agostino in Rome Pintelli still retained the mediaeval projecting diagonal ribs, but as already stated, neglected the separating transverse arches between the different bays.

More favor was found by the "concealed" cross vaults, that toward the crown were changed to a spherical surface, and in this form were better adapted to receive surface ornamentation.

838 The predominating forms remained the tunnel vault with semicircular or elliptical section, particularly those with intersecting side compartments, then the correct and the incorrect dome (Bohemian vault), as well as the dome on pendentives, and for apses and chapels the quarter sphere or niche vault.

The vault surfaces were either plainly covered by stucco,

the most common of which is the "L-shaped" or "hook" type. This is a simple, but effective, device for holding a wire in place. It is made by bending a piece of wire into an "L" shape, and then inserting the end of the wire into the hole in the wall. The wire is then bent back over the edge of the hole, and the end is held in place by the weight of the wire.

Another common type of wire is the "U-shaped" or "hook" type. This is a simple, but effective, device for holding a wire in place. It is made by bending a piece of wire into a "U" shape, and then inserting the end of the wire into the hole in the wall. The wire is then bent back over the edge of the hole, and the end is held in place by the weight of the wire.

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or were animated by coffers. (S. Andrea in Mantua, Fig. 804), covered by paintings (choir of S. Maria del Popolo in Rome with the magnificent color decorations of Pinturicchio), completely covered by stucco ornaments, as in the domes of Madonna delle Grazie in Brescia (Fig. 807), or adorned by both stucco and painting, like the vaults of the side chapels in S. Maria sopra Minerva at Rome.

572. Surfaces of Walls and vaulted ceilings, their Decoration and Subdivision.

The subdivision and ornamentation of the surfaces of walls in the bays of the middle and side aisles are fixed by the arrangement of the openings for light, by the sizes of the enclosing and supporting elements, and by peculiarities in the arrangement of the plan, indeed also frequently by the chosen kind of ceiling.

Of the solution of the problem for interiors with a single aisle with added chapels, it may be recalled, that S. Francesco near Florence has the so-called open framework of the roof, and S. Maurizio in Milan has a vaulted ceiling. (Fig. 808).

In both cases were made definite divisions into bays, marked by pilasters. The same is the case in the vaulted churches of the later time, where the supporting points are especially marked by projecting columns in the antique sense. (Plans of Baths).

If the clearstory walls and their roofs rest on piers, as Alberti carried out in S. Andrea in Mantua, or as the case in S. Peter, then the Renaissance adopts the same effective motive, which is employed with such great success on palace facades (Cancellaria in Rome, Palace Bevilacqua in Verona), -- the rhythmic bay, and thereby has the same imposing effect as in secular architecture. But still more peculiar is the effect if the pier is divided into two supports connected by arches, as in S. Salvatore in Venice, and these are joined in the nave by narrow tunnel vaults like wider transverse arches, between which rise small domes on pendentives. The tunnel vaults in the middle aisle continue toward the side aisles, while the low arches between the piers become side arches for the little domes lying behind in the side aisle.

The column appears again as a support of the clearstory in its ancient rights, then receives also the antique entablature

block between capital and impost, as in both basilicas of Brunellesco in Florence, where they again seek to make good by an intermediate form in the poverty of late Roman and mediaeval art. Above the arcade on columns in the Florentine buildings mentioned, the surface of the wall remains without further subdivision; only the elongated windows animate it. (Fig. 808).

but as for porticos and courts the single columns were omitted, and those coupled in pairs appeared in their places, so was executed the like change in the supports of the middle aisle, where also those of Alessi followed the innovation introduced. (See the beautiful three-aisled church of S. Siro in Genoa surrounded by a series of chapels; the columns stand there on a common plinth; the shafts are monolithic of white marble; the antique entablature borne by them consists only of an architrave with two bands with a cornice above it; angels' heads with wings and scroll ornaments decorate the front of the architrave).

Combined in fours, standing on a common pedestal and next receiving a complete antique entablature, we see the columns in S. Giorgio di Genevesi in Palermo as supports to the middle aisle. (Fig. 809).

The Florentine basilicas are satisfied by exhibiting all architectural members in the unchanged polished sandstone of the region, but cover the wall surfaces with white plaster and leave this as the sole decoration. The Genoese and Venetians did otherwise, particularly the northern Italians in contrast to their allied relatives in the south, required colors and their transitory and monumental polychromy, making the greatest sacrifices. How far this could go, eloquent evidence is given by the walls and ceilings of the single-aisled Sistine Chapel in Rome (Figs. 810, 811).³⁰⁰ First separated by pilasters are cloth patterns on the lowest zone of the wall, then a second with paintings from sacred history, above being recesses for light with slender round-arched windows, right and left of these being the solemn forms of church fathers in niches, above which are the lunettes and the ceiling vault intersected by compartments, with its never again erected and unmentioned subdivision, and the magnificent paintings of Michelangelo and his "Last Judgment" on the altar wall! Who can

resist the charm of such an interior consecrated by the Deity and by Art? Here must one indeed say after viewing it for a moment:-- "Stop a moment then, thou art so beautiful" -- and so finished likewise! A finely membered, purely architectural decoration is shown by the wall surfaces of the apses and of the choir niche of the Cathedral in Como (Fig. 812).

Note 300. From Letarouilly, P. & L. Simil. *Le Vaticen et la Basilique de Saint-Pierre de Rome*. Vol. 2. Pls. 18, 20. Paris. 1882).

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573. Floors.

In the best period men rejected in churches the luxury of the rich floors, whose magnificence withdrew the eye from the art forms of the building. A covering of marble slabs in two or three different colors was regarded as least disturbing and as satisfactory. In the cathedral of Siena and that of Lucca were made inlaid pictures with figures in variously colored marbles, bordered by interlaced bands, with a rich frieze of dolphins. (Figs. 813, 814). Domenico da Nicola (1423), Beccafumi and other artists were entrusted with the execution; black, white and red marbles came into use there. The originals are now largely replaced by copies, or concealed by board floors, the removed originals being preserved in the Opera del Duomo in Siena. (Condition in Oct. 1912. Fig. 814. Original drawing of the year 1866).

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Where in the earlier work a floor mosaic was employed, there is repeated the well known ornaments of the early Christian period and of the Cosmati style (Sistine Chapel, Tomb Chapel of Cardinal of Portugal in S. Miniato, chapel in Palace Riccardi in Florence). Extensive use is made of colored glazed clay tiles in the south, especially in Naples. Works worthy of mention are still preserved in S. Giacomo and in some chapels of S. Petronio in Bologna of the time from 1409-1487, in Venice (1510), in Parma (1471-1482), in Padua (1491), in the sacristy of Loreto, being a floor of beautiful Siennese work with grotesque ornaments (1500-1540), in the sacristy of S. Pietro in Perugia is one such of 1563, and in Naples one of 1440, then one in S. Caterana in Siena. (Fig. 497).

574. Form of the principal Cornice.

With main cornice terminate, as for monumental secular buildings, the clearstories and side aisles, and so far as the c

corresponding works are not injured by mediaeval elements, they have an unbroken horizontal direction. They remain within the form of the triply divided antique main cornice (architrave, frieze and cornice); where as on the palace architecture the addition of the frieze may be rejected or the architrave be replaced by an astragal. The projection depends on the magnitude and the richness of the building, as well as on the kind of material, whether dense limestone, sandstone or terracotta are employed. (See Art. 569, Form of External Cornices.).

575. Historical and Technical Additions to prominent Church Buildings.

According to the preceding, we have to do with church buildings, which in their programme are connected with the preceding art epoch, both in the form of plan as well as in the expression of form, but still where something was created, which finally must be designated as sometimes new in the history of architecture, and is also recognized as such. But for certain prominent structures was still required some historical, technical and representative additions, which are evidently also cannot be exhaustive, but which one or another must yield some desirable information concerning their origin.

576. Starting Points.

577. Churches with single aisle.

The beginning was made by churches of plan with a single aisle, with plain walls externally and internally, lighted by high side windows, terminated by a rectangular or semicircular choir, with plain sides and somewhat more richly subdivided entrance facades, characterized by beautiful portals and wheel windows, and covered by the low antique gable roof.

578. Churches with added Chapels.

These were followed by such with added chapels along the sides, required by the increased needs and the demand for side altars.

579. Three and Five-aisled Plans with a series of Chapels.

The latter formed the preliminary steps to the three and five-aisled basilican plans, which again were surrounded by a series of chapels, and so became a maximum of richness in form of plan and in internal treatment. Gabled additions, crossing and side towers, domes as well as vestibules were elevated additions.

It should be noted in the treatment of their forms:--

847 a. An antique tendency;

b. the peculiarities in the forms of facades of basilican designs;

c. The modes of connecting the gable breaks between the middle and side aisles, by convex and concave, sculptured and mosaic volutes;

d. the semicircular gables for the middle aisle and quadrant as well as half triangular for the side aisles;

Reference was made to the difference in the execution between design and reality:--

e. to the mediaeval tendency in formalism;

f. to the building material of the facades (marble, bricks, ordinary limestone and sandstone, plastering;

g. to the forms of plinths for main facades;

h. to forms of portals and entrance doorways;

i. to the architectural forms and glazing of window openings;

k. to the door leaves of wood and of bronze;

To these are added the results of observation of the forms, subdivision and effect of interiors:--

1. In churches with one or more aisles;

2. The different kinds of forms of ceilings (visible roof framework, horizontal and vaulted wooden ceilings, vaulted masonry ceilings);

3. Subdivision of the walls and their decoration by stucco, painting and sculptures;

4. Treatment of the floors;

5. Forms of the main cornice of hard stone and of bricks.

According to the scale of this summary should follow the corresponding remarks.

580. Expression of Form.

The pure antique expression of form first makes its appearance in an impressive manner in Rome and Florence, as shown by the pediment facades on S. Pietro in Montorio (Fig. 761) and S. Agostino (Fig. 762). The accenting of the facades by horizontal belts and mouldings, architrave, frieze and cornice, by the low antique pediment, the balance produced in the composition by vertical bands and pilasters with Corinthian capitals, the antique moulded rectangular entrance doors, the repose and the beautiful subdivision of the windows and mass-

masses satisfactorily show this. For very small objects, for example like the chapel of Palace Turchi (Fig. 769), that entirely recalls one of the antique family tombs on the Roman military roads, as also S. Maria della Nevi in Siena, one believes himself confronted by antique works.

An attempt to free themselves from the ancient restrictions is shown by the facade of the Church S. Maria degli Angeli (Fig. 765) in Siena. The masters L. B. Alberti and B. Rossellino have entirely freed themselves from mediaeval fetters at S. Andrea in Mantua, both in plan, elevation and interior, likewise at the Cathedral in Pienza, and at least on the exterior at S. Francesco in Rimini.

581. S. Andrea in Mantua.

S. Andrea in Mantua is a building with a single aisle, showing the form of a Latin cross in plan, with chapels along the side, a dome over the crossing, and a dignified pediment facade subdivided by pilasters with a great middle arched entrance to the high vaulted vestibule. (Figs. 763, 764).

Alberti, who abode in Mantua after 1459, after Cardinal Francesco Gonzaga, son of Duke Lodovico had decided on the rebuilding, was entrusted with the design and supervision of it. The erection was superintended by Luca Francelli. In February of the year mentioned a beginning was made by tearing down the old S. Andrea, but of this remained standing the bell tower completed in 1412. In April of 1472 the said superintendent Francelli received the final drawings of Alberti, who died in Rome at 68 years of age, the same year. The building was slowly constructed, and Francelli left Mantua in 1487 for lack of employment. Only in 1490 were the structural works again continued, and about 1500 the vestibule and nave were completed; then the building again remained quiet from 1550, and only in 1597 the transverse aisle and choir were begun with ample means, and at the express command of the Duke, according to the drawings of Alberti, which were thus preserved a century later.

Transepts and choir were probably completed by Viana from Cremona up to the year 1600. Then the building again rested until 1696. As in the building of the Cathedral at Como, meanwhile the sense of refined forms of the early Renaissance was lost, men prized little what had been executed previously, and also would have no more of the dome originally planned by

Alberti. The architect Torre was called from Bologna, who wished to rebuild and construct everything in Barocco style. But a happy fate again interposed a pause from 1710 to 1731; but from the following year we again find, that after Oct. 15, 1715, the two crossing arches still lacking then and the substructure of the dome were taken in hand, and that Cavalier Filippo Juvara from Messina, architect of his Sardinian majesty, was entrusted with the completion of the building. In 1738 were finished the pendentives and the great principal cornice below the drum, and in 1763 was finished the dome in the rough, and it was covered in 1782.

Dilapidation of certain marble members and of the stucco of the western vestibule made necessary in the year 1832 a restoration, by which were unfortunately destroyed remains of still preserved paintings of Mantegna and his sons. The stucco was removed and replaced anew, the painted coffers being executed in relief. The enclosures of the small doors and the p plinths of the four great pilasters were restored in marble, as well as the bases originally executed in terra cotta. The capitals of the great pilasters and those of the internationals, that were modeled in lime mortar, were likewise replaced by those of marble: Likewise the internal walls were lined 5.4 ft. high with marble, and finally everything else was coated with light gray and yellowish milk wash, whereby also the red terra cotta members were concealed, but which in Oct. of 1901 were again made visible in their original color. Until the year 1876 these embellishments were continued -- and now the guide books speak of a facade of white marble! How different must have been the building of Alberti in its original materials, and in the effect with the decoration by the paintings of Mantegna!

The details of the old parts of the church agree with those of S. Francesco in Rimini, and also with those of Palace Rucellai in Florence, so that also in this can exist no doubt of the participation of Alberti. As technical may be added, that in the construction all visible anchoring with iron is avoided, and that the tile roofing rests directly on the equalized tunnel vault -- entirely after the antique manner. Walls and vaults are built of bricks, and all repeated members, mouldings and enclosures with pilasters of neatly shaped and

excellent terra cotta. The flat surfaces are plastered, the capitals of the internal columns, the coffers, the subdivisions of the great dome, and the mouldings of the vault are of stucco. The interior is richly painted and is further emphasized by gilding. 301

Note 301. See the thorough and carefully established history of the building with beautiful drawings by E. Ritscher in *Zeits. f. Bauw.* 1899. p. 1, 181. Berlin.

582. S. Francesco in Rimini and the cathedral of Pienza.

Alberti erected the marble Temple of S. Francesco in Rimini, whose architectural elements are taken from the antique, as a rebuilding of a Gothic Franciscan church, whose external walls and pointed windows he spared. Independently of the old construction he clothed the entire preserved structure with a marble shell, left the pointed arches of the side chapels in the interior, and only changed their details. On the exterior he enclosed the sides by a round-arched arcade, in whose niches were placed sarcophaguses. He built the front facade entirely free, without caring for the earlier one, and he only retained the clear dimensions of the entrance doorway. In the frieze above the lower colonnade stands the inscription:--

"Sigismundus Pandulfus pan. V. E. Anno Gratiae. 1450."

The facade remains unfinished. How it should be is suggested by a medal of Matteo de' Pasti, that also shows that a dome was planned for the building, for the new portion, of which the corner stone was laid on Oct. 31, 1446, with the benediction of the bishop of Rimini, Bartolomeo Malatesta. As building material served a white Istrian limestone; for the balustrade in the interior was employed reddish Veronese marble, but the tympanum of the portal was composed of variegated kinds of marble.

Alberti furnished a model, which he supplemented by drawings; he did not concern himself with the execution itself.

The treatment of the interior leaves much to be desired; the wall members above the impost cornice between the adjoining pilasters are no very expressive additions; the limestone work exhibits the addition of gold and of blue peculiar to the early Renaissance, as on the Palace in Urbino and on different tombs in Rome (Araceli) and elsewhere.

Peculiar is the shape of the bases of the piers of the chao-

chapels, where instead of the lions usual elsewhere (Colleoni Monument in Bergamo, monument of Giovanni Borromeo on Isola Bella), are chosen pairs of elephants in dark marble and plaited flower baskets with cupids. 302

Note 302. Further in Yriarte, C. Rimini. Chap. X. p. 179-202. Paris. 1882.-- Also Builder, Jan. 18. 1883. p. 40-42, 64, 1901, May 20, p. 614. -- Especially Zeit. f. Bauw. 1893. p. 8, 20.

85 For comparison in the conception and execution of the same problem on the part of two contemporary masters, allied in spirit -- Alberti and Rossellino -- the unfinished facade of Rimini and the completed one of Pienza may serve. Both start from similar points of view. (Compare Figs. 770, 771, of the facades of Pienza after Laspeyres, and that of Rimini after F. Seitz and H. von Geymüller's work on Tuscany).

86 The triple division of the entrance facade in Rimini and Pienza expresses agreement, but is executed differently in form. What the ancient Roman theatre facade desired is again attempted, the elevation in several stories and the extending of a vertical division by pilasters and columns, although no innate reason therefor exists. One would suppose a two story interior, an assumption not realized. The facade becomes a piece of ornamentation, like its blind arcades being in nowise justified. The well known medal of Matteo de' Pasti agrees with the unfinished parts of the existing facade; it may be interpreted for the composition in the sense desired by F. Seitz, p. 3.

583. Simplicity of the Side Facades.

87 The pure Tuscan Renaissance also limits itself on the side facades of its three-aisled churches to a great measure of simplicity, and develops them in form from the needs, as the section requires. The gradation from the middle aisle to the side aisle and the series of chapels faithfully shows what the architect had done in the interior. From the facade may be directly read the plan and the section. With the antique are made the usual compromises in the subdivision of the facades of the chapels; blind archer between pilasters, in place of which for the clearstory appear consoles as apparent supporters of the antique cornice. Thus their architraves do not entirely appear as mere decorations, for men wished to allow them an apparent purpose, as on cell walls of different antique

Roman temples without columns. Dignified and quiet, with the most beautiful subdivision of the wall surfaces are also effective these side facades in their modesty. For them would strikingly harmonize a front facade, designed on the basis of the single-aisled Church of S. Felice in Florence.

584. Influence of the Material and the Form Treatment.

How great the influence on the formal treatment might be of the building materials employed, is shown by three Oratories mentioned in Bologna, Perugia and Rome, that are built of bricks, marble and tufa. (Figs. 778, 815, 816). On the first is built a treatment with wide spaces and yet with refined treatment, like a triumphal arch or recalling a splendid portal of the Cathedral in Como, richly adorned by figures and ornaments, on which also color and gilding play a part, the whole with good projections and mouldings, expressive and almost excessive in its richness.

Structures of the greenish gray volcanic stone on the contrary are inferior, since on account of their small resistance to weather the ornamental or figure work in relief is almost excluded, and the color of the materials does not permit an animated effect of light and shade.

What is not advisable in natural materials, is again carried out in part in structures of bricks, when color and ornament participate. Still the works have something stumpy, since strong mouldings and projections cannot be allowed. On the other hand, if dense or sedimentary limestone or hard sandstone come into combination with bricks, then is a maximum produced in the development of facade architecture, such as occurred on the Certosa near Pavia.

585. Cathedral in Como.

The same is permitted by the use of variegated limestone (marble), evidence of which is given by the Cathedral in Como. In this is a three-aisled basilican design, the Latin cross with dome over the crossing, polygonal endings of choir and transepts, constructed without tower or vestibule (Fig. 817) plan, Fig. 818, perspective view). Begun in Gothic and completed in Barocco, it is internally and externally entirely built of white marble from the quarries of Musso on Lake Como. On a stone built into the choir is found the inscription, that the church was begun in 1396, and that in 1513 was laid the

first foundation stone of the choir. Work continued without interruption till 1665, and only the completion of the dome remained, which was begun in 1730 and completed in 1744 with an expenditure of \$48,731. The main altar was made in Rome in 1728, and accordingly we do not have to do with a native work, whose front facade further has remained Gothic. The inscription tablet at the base is supported by cupids and adorned by a shield of arms and chimeras, and states:-- (See text).

85- On Nov. 18, 1487, the new model of the choir was mentioned for the first time, for perhaps though not very probable, a sketch of Bramante was its basis, and on March 15, 1510, was first determined the site of the building, while there according to the inscription given above, the foundation was commenced on Dec. 22, 1513.

The name of Bramante does not occur in the building documents, but to a Milanese pupil of Bramante, Christoforo Solari, since as so frequently one is not satisfied with the native builder, is attributed the preparation of another model, which was then executed; finally also the Cathedral architect Tomaso Rodari assents to him, whose own name is alone given as architect on the marble tablet.

The wooden model "of the great chapel" with the drum of the dome is preserved, and is published in the work mentioned below ³⁰³ as the common work of Rodari and Solari. Likewise Santo Monte gives the representation of the choir after the model of Rodari (now preserved in museum Civico at Como), but which was not executed in this design. (Fig. 819). It no longer pleased the later masters of the Cathedral building. New designs were prepared, that are said to have special reference ⁸⁶ to the dome. For these Biffi (1684) first sent a design from Milan, that did not suit. Then came Castello in 1686 in the series, who was paid for his work in 1686. Then men applied to Fontana in Rome, who furnished a general drawing of the Cathedral with the dome and a section, which was paid for in 1688; he also examined the four piers with regard to their strength. Finally in the year 1731, it was decided to begin the dome; but the citizens doubted, whether the great masses of Fontana's dome could be supported by the substructure. Therefore they later called Juvara (1731), who as architect and engineer of the king of Sardinia stood in high esteem, and n

had him make new proposals -- procedures and expenses, that might all have been spared, if they had adhered to the existing good model of the first architects, Rodari and Solari!

Note 303. Santo Monti, D. La Cattedrale di Como. Pl. 97. Como. 1897.

If one sees the designs of Castello, Fontana and of Juvara, his heart does not beat faster, and he only regrets, that lack of judgment and of feeling for style frustrated the good designs of Rodari. When esthetics refused, technics must suffer, and the dome was built circular in the interior and polygonal on the exterior, in form and proportions differing from the church, "since men did not trust the foundations, or desired to spare them." also the name of Vanvitelli is yet mentioned with the dome, but whose participation others will not allow. But we still learn so much, that the Milanese engineer Merlo corrected the faults in the external form of the dome (1770) and that shortly before (1769) the Milanese architect had removed other defects. One believes that they lived in the 20th century, when he sees the abuse of a good old structure by stupid owners, architects and conscienceless builders, and an ill regulated public opinion. Rodari, who stamped the Cathedral as one of the noblest works of the Renaissance of upper Italy, experienced 270 years later the mutilation of his work by a Milanese engineer!

85 The repeatedly reviewed building documents by Monti do not name Bramante as engaged on the building, even if von Geymüller also conjectures this on the ground of a critical comparison of style, that Bramante had a hand in the game, perhaps by good advice in the form of sketches -- which is scarcely credible.

Portals and windows of the nave, the shrines crossing the buttresses, the urn bearers before the frieze of the latter remain eternally beautiful works, and also indeed uncontested works of Rodari.

By the half destroyed wooden model can still be readily seen what Rodari intended; concerning the outline of the great dome it unfortunately no longer affords any conclusions. But they must have been but little different from those of the half domes of the transepts. On the present condition of the model see Fig. 820, after a sketch made by me in Sept. 1911.

586. Church of the Certosa near Pavia.

The history and description of the Certosa near Pavia would alone fill a book. As an orientation may serve the Essay of Luca Beltrami, "La Certosa di Pavia with 70 illustrations and 9 plates. Milan. 1895." The study of the folio work of Gaetano and Francesco Durelli is particularly recommended. Further dates in the architectural history follow in this connection.

The Monastery was founded by Gian Galeazzo Visconti, Count de Virtù, first Duke of Milan. On Sept. 8, 1696, was laid the corner stone; 6 years later (1402) already died Galeazzo. Beginning as Gothic, then carried on in the new style, it was substantially rebuilt in the year 1542. The first architect remains unknown; the Germans Enrico Gamodia and Marco di Campione are named. But assured is the artistic work of Giovanni Antonio Amadeo or Amadeo (1466) as leader in the works in the new style.

As further workers are also mentioned by documents:--

Benedetto Brioschi, Fratelli Mantegazza, Ettore d'Alba, Antonio da Locate, Battista and Cesare da Sesto, Francesco Piontello, Giacomo Nava, Marco, Agrati, Angelo Marini Siciliano, Andrea Fresina, Christoforo Solari called Gobbo, Christoforo Romano, Battista Gattoni, Agostino Busti called Bambaja, Antonio Tamarini and Giacomo della Porta.

The principal building materials are white marble and granite, dark red and colored glazed terra cotta, these for the cornices, whose colored glazing is still partly preserved.

The stone sculptures of the courts for the time from 1450-1466 Gotthold Meyer divides into the following classes:--

- a. Small sculptures in the tendency of the Campionesese;.
- b. Dry stonecutters' work corresponding to the transition style of Filarete and of Guinoforte Solari of Florence, and; .
- c. Small sculptures of the early Renaissance of Amadeo and of Christoforo Mantegazza. The two last named executed half the sculptures of the facade; in 1473 the remainder were transferred to Amadeo.

The shrines crowning the buttresses are likewise the work of Amadeo in 1478, and also the terra cottas in the small and great cloisters.

258 587. Colleoni Chapel in Bergamo.

From master Giovanni Antonio Amadeo likewise comes the Chap-

of Colleoni in Bergamo begun in 1470, but which suffers by the gayety and overloading of the entrance facade. The facade surfaces are covered by square marble slabs of black, white and red colors, which are set on the diagonals to produce the well known shaded cube pattern; the pilasters are bordered by dark gray marble, the medallions are in the same style, while the sculptures themselves are white, and the ornamental panels are wrought in red Veronese marble. The small window pilasters of the upper zone are entirely of white marble; on the little columns and candelabras beneath alternate the materials again in black, white and red colors, so that the two outer ones are white and the two inner ones are red; gilding must originally have contributed as enrichment. With great charm are the sculptured works in the interior, and first the entirely naturalistic vine decorations of the surfaces of the pilasters in the choir.

A very expressive and earnest work in the chapel is also the tomb of wedda, the daughter of Bartolommeo Colleoni, of white marble, on which the artist immortalized himself by the inscription:--

"Giovanni Antonio Amadeo executed this work"

Thus we read the name "Amadeo" instead of "Omedeo". Also see Francesco Malaguzzi Valeri; Giovanni Antonio Amadeo. Scultore e Architetto Lombardo. (1447-1522). Bergamo. 1904.

588. Cathedral in Sebenico.

According to the "Cronaca della casa Veranzia," the Cathedral in Sebenico was begun on April 9, 1431, in the Gothic style as a three-aisled basilica with transepts, dome over the crossing and three polygonal choir niches. The architect was the Venetian Antonio, sometimes called Pietro Paulo, who according to Mothes ³⁰⁴ belonged to the artist family of Massegne, and was already engaged on the Church of Frari in Venice. But already after 10 years this master was sent away "on account of faults and defects in the building," and a "master Georgius Mathei Dalmaticus" was chosen, also called master Orsini da Monterotondo, also otherwise known by works in Ancona, Spalato and Ragusa, at which latter place with Michelozzo's advice, he conducted the works of restoration of palace dei Rettori. By the contract of June 22, 1441, he was first engaged for 6 years, but this was extended in June, 1446 for 10 more years.

In 1470 we find master Orsini for a short time in Rome. He died in 1475 in Sebenico. During this time he completed the Gothic portion of the Cathedral, and transformed it into the system of the Renaissance, i.e., he completed the ground plan in its entire extent, the side aisles with the pointed arcades and vaults, as well as the remarkable roofs, and the entire choir structure.

Note 304. Geschichte der Baukunst und Bildhauerei Venedigs. Vol. 1. p. 243. Leipzig. 1859.

On the angle pier beside the northern apse is a stone, that bears in Gothic characters the words:--

"This work was done by master Giorgio Matheo Dalmatico"

To be executed after the death of Orsini was still the clearstory, the transverse aisle and the dome.

After him came the third architect, Niccolo di Giovanni Fiorentino, known by works in Trau and Spalato. He was engaged on June 1, 1477 at an annual salary of 120 golden ducats, that he also received until 1517. Under him were completed the transverse aisle with elevated choir, the galleries and the stone roofs over the apses. Then in his place came Bartolommeo, sometimes called Giacomo da Mestre; he was succeeded by his son Giacomo, who was busy until 1535. A Giovanni Masticevich, stonecutter from Zara laid the last hand on the building, whose completion is stated by the inscription in the interior:--
(See text).

Thus 307 lustres (of 5 years each) and one year give 1536; the building period thus lasted 114 years.

The material is a white and extremely firm limestone, quarried in the vicinity, the technics are perfect, and the form no less so. The details of the construction have already been described. Attention is then especially to be called to the small baptismal chapel, whose ceiling consists of a single richly ornamented block of stone.

The beautiful structure showed great injuries at the beginning of the last century, that gave occasion for a thorough restoration, in which the entire dome must have been removed and rebuilt; likewise the stone roofs of the aisles were laid afresh, and also four capitals, a column of the arcades and a great number of pieces of the cornice were replaced. The Austrian government became responsible for this work in the

most complete manner. 305

Note 305. See Grous, J. Der Dom in Sebenico. Kirchenschmuck. Jahrg. 27 (1886). Nos. 1 - 5.

A structural section, the general perspective view, and the main facade of this unique existing church, are given in Figs. 781, 782, 783.

589. Transition from the Side to the Middle Aisle.

At the principal facade of the Certosa near Pavia for the transition from the middle to the side aisles and from the aisles to the chapels, various expedients were under consideration. According to the model of Visconti and the fresco of Borghese the shed roofs should receive in the Gothic style inclined half gables (Fig. 821). But they were suppressed by the richer execution of the main facade, and a blind architecture with semicircular gable was placed instead. One motive is dry but logical, the other a show-piece, behind which the shed roofs of the side aisles must be concealed. Less easy was the problem to be solved for the middle aisle itself. The three higher aisles were there gathered into a unity and treated as such, when the two stepped gables ended abruptly against the higher and horizontally terminated front structure. The original architectural idea had nothing more to do with this new conception (Fig. 821). Were the masters of the building at that time contented with the building with horizontal ending as shown today, or had they planned something further? One might find the contrary from an old engraving (in Malaguzzi Valeri), if only these so-called old engravings were always admissible, for they are almost all inaccurate. According to the engraving the three higher aisles are brought beneath a gable roof, like the hall churches; but the middle aisle should again be indicated by separate vertical members and by a smaller gable (gable within a gable), which never could have been the case. The representation might also be so interpreted, that we have to do with a piece of ornamentation, where the common gable roof extended only so far back as the chosen thickness of the facade wall, and the basilican design of the nave adjoined it in the form of a normal three-aisled basilica. Then would we stand before the same deception as now, that only now has a magical effect by the inserted blind gable (Figs 821, 822). But the grand gabled facade required a different

ending, another termination of its masses. Here is wanting the proper arrangement!

But instead of this simple and of the complex solutions, (Fig. 821), the Renaissance also finds yet other ways, when it contrasts with the direct mediaeval gable the curved volute-like, or the simple arched form. Serlio pleases himself with the latter on his design for a basilican church with three aisles. Richer is the transition by convex or concave fully developed volutes with two scrolls at the ends. (Fig. 821 A, B, after representations on marble reliefs, on which one of the volutes is beset by acanthus leaves). L. B. Alberti recognized the danger of too strongly accenting this architectural form, and allowed it to only express skilfully applied mosaics. How easily one may injure an otherwise well designed facade by an accessory in too strong relief or made at too great a scale, is shown by many buildings on Italian soil in frequently a very frightful way. (Cathedral at Turin, somewhat more acceptable at Church Gesù in Rome). To the simple but scarcely suitably developed form of the half gable Palladio returns; Guarini on the other hand resorts to the broken gable with statues placed thereon. (Also see the volutes of S. Maria della Salute in Venice).

590. Transition with Semicircular and Quadrant Roofs.

Otherwise appear the gable forms and transitions for semicircular and quadrant roofs. They logically and accurately follow in outline the form of the roof, both of middle and side aisles, whether the roof be constructed of stone or wood, as may still be seen and examined on the single-aisled little Church S. Maria dei Miracoli (Fig. 823), or on the greater Church structure of S. Zaccaria in Venice (Fig. 824), or on the three-aisled Cathedral in Sebenico.

I had formerly made the statement, that the semicircular gable was an original invention of the Italian Renaissance, which was to be found particularly in Venice and on the Dalmatian coast, but was better taught by a coin found by Dell, (1908), (who moreover had the goodness to call my particular attention to it), that the great Goethe was again right in the statement (Faust II, 2), "who can think something stupid or wise, that antiquity had not thought?" The coin is reproduced in Fig. 825, the Temple of Isis in Rome, already shows the

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semicircular gable over the entablature of the temple.

Other semicircular and quadrant gables have already been mentioned on a church in Ragusa and one in Ronigo near Verona.

591. S. Spirito in Florence.

In the year 1433 Filippo Brunelleschi received the commission to rebuild S. Spirito in Florence, but which soon met the fate of all churches so far treated; he divided it into stories. At the death of the master the plan was constructed in its main lines, and the model of the building was made. Antonio Manetti was entrusted with the completion of the structure, so that the principal building period probably fell in the time 1470-1480, and the church could indeed be consecrated in 1481, even if it were not yet complete in all parts. Besides Manetti, called Lo Scorbaccia, who was engaged as mason foreman on the building 1475-1490. The bell tower was begun by Baccio d'Agnolo (1462-1543), and completed after his design under Cosimo I.

For the design, the cross-shaped nave basilica with the accenting of the crossing and the cross ending in two parts is Brunellesco responsible, but not for all details. The middle aisle has a horizontal wooden ceiling; the side aisles are covered by domes, and the chapels are covered by niche vaults. The dome over the crossing has a low drum without windows, above which rises the so-called "melon vault" with ribs, small round windows and a lantern at top. Beneath the dome stands the main altar, as in S. Maria del Fiore at Florence and in the Cathedral of S. Peter at Rome.

The narrow windows of the side chapels, that are now half or entirely walled up on account of the altars, exhibit in a horizontal section a form agreeing with the semicircular form of the chapel wall. From this it may be concluded, that the now plane walls of the chapels were not originally intended.

As now proved, there exist irregular hollow spaces in the masonry between the chapel walls, that support this conjecture. The later master indeed desired to get rid of a certain sort of "angles", and to secure a more quiet side facade by the equalizing straight wall. 306

Note 305. An oblique arrangement occurs on this side of the Alps at the Church S. Michael in Munich; there the architect sought a solution, by which the internal semicircular form of

the chapel is also shown externally, and still makes possible a straight direction of the plinth and cornice (Fig. 820). The attempt is interesting and worth mention. The placing of dwarf columns on the domes or the niches of the Certosa near Pavia can only be termed a foreboding of this solution.

The columns in the interior are monoliths and polished, like the entire internal stonecutters' work, set with tolerably fine joints, and coated with white lime mortar. The forms of the angle piers of the crossing, the supports for the four arches of the middle aisle and the dome are borrowed from those in S. Maria Novella and S. Croce in Florence. To the tall piers of the middle aisle are attached the shorter ones of the side aisles, so that the arches of the latter spring considerably lower than those of the middle aisle; therefore they have to receive below an arch and the thrust of a vault from two sides, with similar ones above, opposed to the former but at a different height.

In S. Maria Novella the square form of the nucleus of the pier has a side of 3.44 ft, on two sides being projections of 1.15 ft. and on the other two a similar one of a half column with two small rounds. In S. Croce the crossing pier is octagonal with a diameter of 4.92 ft. In both churches, one of which is vaulted, the other showing a beam ceiling between the arches, deformations in the piers exist, or more worthy of mention, while the same arrangement in a Venetian church complete bends are noted. In S. Spirito the nucleus has only a side of 3.74 ft. with projecting half columns on two sides, where the separate ashlar of the courses are mostly through stones. The vaults are constructed without visible anchoring, but all four angle piers with the adjoining arches are strongly deformed. Also all vaults of the side aisles exhibit large parallel diagonal cracks. Many injuries may be referred to this, that the arches at one side rest on masonry with numerous joints, and on the other side on ashlar with few joints, so that both supports must settle unequally and the consequences of this are movements in the arch. Thus are the deformations very great in the arches of the side aisles, especially at the right of the high altar, and also the dome shows small cracks in the masonry of the drum, that continue to the arches.

592. S. Lorenzo in Florence.

S. Lorenzo in Florence was begun in the first decades of the 15th century as a new building of the Tuscan-mediaeval type. Brunellesco found, when the work was entrusted to him, the ground plan in the foundations of the ~~transverse-aisle~~ a and choir; therefore the nave basilica with transepts was not placed exclusively at his discretion. Particularly in regard to the form of the transverse aisle, S. Croce and S. Maria Novella in Florence served as models; but the master created the nave entirely new.

Likewise Antonio Manetti carried this building further and in 1460 brought the interior to completion; by him also ^{is} the present form of the dome over the crossing, since the transverse aisle and crossing were still unfinished at Brunellesco's death. He likewise left the gable facade incomplete, which he had indeed designed as simple.

As at S. Spirito the middle aisle has a horizontal coffered wooden ceiling, now colored white and gold; the side aisles are covered by domes, the chapel niches by tunnel vaults and the crossing by a hemisphere without drum, but with a lantern at the vertex.

The four supporting cross-shaped piers have in the square nucleus sides of only 2.95 ft. with projections of 0.66 ft., the ashlar courses being 1.12 to 1.67 ft. high. Here also the stonecutter's work is all polished, but is now covered by a light gray lime wash. The columns are monoliths, the vaults are constructed without visible ties. In the arches of the side aisles resting on the crossing piers, all the keystones are displaced from their normal positions, and all vault compartments of the side aisles are cracked diagonally, like those in S. Spirito. As there, the material is a grayish-green sandstone; the surfaces of the walls and vaults are plastered white. There further come into consideration:-- S. Satiro in Milan, begun by Guinoforte Solari, whose further construction is sometimes attributed to Bramante, also sometimes to Bramantino. To the great native of Urbino must the building of the sacristy be referred with certainty, and indeed still other parts of the interesting work.

What now appears is a three-aisled pier basilica with transverse aisle, dome over the crossing and a sham choir. The tran-

transepts and middle aisle are spanned by coffered tunnel vaults, divided into bays by strengthening arches, corresponding to the pilasters of the piers below. The dome has a low drum without windows, its internal hemispherical surface being decorated by coffers; the apex is crowned by a lantern; the enclosing walls extend above the vault and support a low conical roof.

The side aisles are covered by small cross vaults, and only extended beyond one side of the transverse aisle, since an extension on the other side was impossible on account of the obstructing limit of the building. This limitation led to the construction of the sham choir, which does not fail in its effect, so long as one remains on the middle axis of the building, and does not observe the bend in the lines of the internal cornice, but which makes itself unpleasantly evident, the more one leaves the middle axis or approaches the choir. Seen from the transverse aisle, the whole appears ridiculous and "famous" only for the ignorant; the beautiful sham does not maintain itself, and what is intended is not attained. Until 149, extended the building period; the dedication is given as occurring in 1523. (Fig. 48). ³⁰⁷

Note 307. A good illustration is found in Gossino. -- For the sacristy in S. Sotiro and the choir of S. Maria delle Grazie in Milan, see Figs. 29, 46.

The Church della Santa Casa in Loreto comes in consideration here, only so far as Bramante is mentioned in the work of improvement on the dome, but more yet since he was the creator of the wonderful marble exterior of the Virgin's House beneath the dome, that Andrea Sansovino (1513-1529), Girolamo Lombardi, Tribolo, Bandinelli and others adorned by statues and reliefs, and Girolamo Lombardi furnished with bronze doors. ³⁰⁸

Note 308. A description of this architectural work is to be seen in Zeits. f. bild. Künste, 1871, p. 160. -- The sketch plan there given is entirely wrong, for example the nave is too short by one bay.

593. Churches in Milan, Genoa, Florence and Venice.

Of Milanese churches, some are still to be mentioned according to the dates of their origin.

S. Maria near S. Celso (1490), built by Giovanni Dolceoueno, with beautiful forecourt and a rich facade by Alessi. A three-

aisled pier basilica with 12-sided dome on a closed drum and
 467 a choir aisle with nine external sides, or for five square a
 and four triangular chapels. The choir itself forms a half oc-
 tagon in its plan. 309

Note 309. See the publication in Cossino, plates 19-24, in
 whose text Bromonte is still designated as creator of the ves-
 tibule.

S. Vittore by Alessi (1560) on account of its magnificent
 internal Barocco decoration.

S. Fedele, built as a Jesuit church, from Pellegrini's plans
 (1569), completed by Martino Bossi. 310

Note 310. Published in Cossino.

In Genoa is to be mentioned the three-aisled Basilica of S.
 Annunziata on account of its extremely magnificent interior
 with inlaid works in red marble on the walls, built by Giaco-
 mo della Porta.

In Florence the facade of S. Trinita (1593) by Buontalenti
 (1584), and on account of its interesting and rich Barocco f
 facade of the year 1663, S. Salvatore in Venice by Giorgio S
 Spavento, and completed in 1534 by Tullio Lombardo.

Of the churches of Palladio in Venice are to be named:--

S. Giorgio Maggiore, begun 1560, with the facade finished in
 1575 by Scamozzi.

Further, the Church S. Redentore with single-aisle interi-
 or, built in 1576.

868 594. Roman Barocco Churches.

Of Roman churches of the late period may be mentioned as
 particularly prominent:--

Church Gesu, the principal church of the Jesuits, built at
 the command of Cardinal Farnese in 1568-1575 by Vignola and
 469 Giacomo della Porta, showing one of the most magnificent and
 richest interiors of Rome. Its nave was furnished with costly
 marble paneling by Prince Torlonia in 1860.

S. Andrea della Valle, begun in 1591 by P. Olivieri and com-
 pleted by Carlo Maderna, with a facade after designs by Carlo
 Rainaldi (1665). Particularly worthy of consideration on acc-
 ount of the bronze copies of the Pieta, the Lea and the Rach-
 el of Michelangelo, and the charming bronze candelabra in Oh-
 apel Strozzi.

S. Ignazio, begun in 1626 at the cost of Cardinal Ludovisi

and completed in 1675; planned by Father Gressi with a facade by Algardi. (Fig. 827, plan).

595. Singular Perspective.

Famous is the interior of the building by the paintings of Father Pozzo with his singular perspective, whose painted architecture seeks to excel the monumental. With extraordinary and unsurpassed skill and a distinguished sense of color, we see the executed composition -- but one thing remains always fatal to it, that it has the proper effect only from a single point, that is wisely indicated by a round marble disk in the middle of the main aisle. Leaving this, the beautiful appearance ceases, and it shares the fate of all similar perspective follies. Shame on so much spirit and knowledge in the wrong place. (Figs. 828, 829).

It should not remain without mention here, that already Leonardo da Vinci busied himself with this sort of decorative painting, and is known to have given suggestions for its execution. With the addition of the corresponding illustrations, the purport of the two rules of the great master may be given. He says:--

I. "To draw a figure, that on a wall 20 yards high shall seem 40 yards high, have the proper dimensions of the members, and shall stand upright on its feet. Neither in this nor in any other case must it trouble the painter, how the wall or surface is constructed or shaped on which he paints, particularly if the eye itself viewing the painting must look through a certain window or sight opening. For the eye does not have to consider the plane surface or curvature of the wall, but only the object that shall appear in different places in the free space represented. It would be better to make this figure on the curvature of the vault, for there occurs no angle." (Fig. 830).

II. "On a wall 12 yards high, to paint a figure that shall seem to have a height of 24 yards."

"If you desire to paint a figure or any other object, that shall seem to have the height of 24 yards, this is done in the following manner. First paint on the flat portion of the wall the half of the man, which you wish to make. Above this you make the other half on the vault or v. But before you make the intended portion of the figure on the upper vault, draw

870 it first on a plane floor, the wall on which you have to paint, exactly in the form as it exists on the vault, then behind this wall the figure is likewise drawn in profile, in the size you desire, and draw (from all its chief points) the sight lines to the point F. And just as these lines intersect the (drawn) wall (or section of the stucco) m n, transfer these (i.e. their points of intersection) to the (actual) wall, that is of the same form as the drawn wall, and thus you have all heights and projections (or depths) of the figure given (perspectively). The transverse dimensions or widths, that are found on the straight or vertical portion of the wall m n, you make in their true form, for by the rising of the wall the figure is diminished of itself. But the (half of the) figure, that extends into the vault, must then diminish (by means of construction) just as if it stood upright. This diminution must you make on a very flat floor, and there will (first be drawn) the figure (in plan) with its true breadth, that you take from the (part on) the wall m n. This must you then diminish on a vertical section line. That will be a good method. (Leonardo da Vinci, Book of Painting -- Vatican copy (Forbinus) . 1270. Vol. 1. p. 424-427. Vienna. Translated by Heinrich Ludwig).

But also Gottfried Semper takes position in this matter in his "Stil" (Vol. 1. p. 69. Frankfurt. 1860), and he says in his inferences from the principle of historical painting; "One conceives the ceiling as a transparent glass surface, behind which the walls remain visible. What is then painted on this vertical wall surface beyond the ceiling as if standing upright., must also so appear, if for this only its projection on the surface of the ceiling (originally conceived as transparent) in the place. This simple rule is at the same time the starting point for the developed art, the so-called singular perspective, that knows how to represent correctly and true to nature the most difficult architectural combinations connected with rich groups of figures, on the surface of every ceiling. It was commonly employed already in the Renaissance by Bramante, Peruzzi and other masters but later was certainly carried by the Jesuits to the height of bad taste. Thus every figure object with head and feet, must have its feet as if rooted on the cornice of the wall, and this is true for all

four walls, as well as for the perimeter of an enclosed, circular wall surface."

596. Visible Roof Framework.

For visible roof framework may be added a final remark:--

The so-called visible framework of the roof of S. Miniato near Florence (1207) (Fig. 798), in which the form of the three-aisled basilica "has received a final and highest consecration," was painted (now restored); the apse is adorned by a mosaic; "Christ between the Madonna and S. Miniato" (1207) (also restored); the five windows of the choir wall are closed by translucent slabs of marble. (A similar closure of church windows is also in the Cathedral at Orvieto). The dignified facade is incrustated with white and greenish marble, whose mosaics date from the 13th century and are largely restored. The church contains true pearls of the minor arts of the Italian Renaissance in the canopied altar, in the ambos, and especially in the sepulchral chapel with the tomb of the Cardinal of Portugal. (died 1459).

The visible roof framework preserved in S. Francesco at Rimini has retained its good rights in smaller church buildings, also by other masters, for example in the Bella Vilanella near S. Miniato. (Fig. 799).

The entrance is also the exit in our buildings, and by this we leave this Chapter with a reference to its characteristics.

597. Porticos.

As a special addition to nearly all quite early and especially on later buildings are to be termed the designation of deep and mostly vaulted porticos, that extend the entire width of the church, or further along the longer sides, or even freely beyond the building. (See the Early Christian buildings in Rome, Church in Empoli, Cathedral in Citta Castellana). Of particular interest is the portico of S. Maria della Catena in Palermo with its depressed arches and its members, that challenge comparison with allied phases of the style.

At the little Church S. Maria delle Grazie in Arezzo the early Renaissance displays a disproportionate arrangement, since the single-aisled building is exceeded about three-fold in width, while at S. Maria della Catena it does not equal to the end of the church. Yet in a matter of form it shows perfected and beautiful details, and structurally a widely projec-

projecting stone main cornice; worthy of consideration. A portico just as beautiful as interesting in design was also erected in Arezzo.

The high Renaissance extends the portico beyond the width of the three aisles, and treats it rather as a protecting front structure. Leo X had such a one erected before the Church S. maria in Domnica or della Navicella in Rome, apparently by Raphael. (See Letarouilly).

The late Renaissance returns again to the ground idea of the transition style at Sacrienza in Naples: Sansone (1591-1678) here furnished in the 17th century one of the most beautiful porticos for a church building of little worth. About 250 years lie between these four different conceptions of the same problem; first showing embarrassment, then breathing freedom and release, later filled with high earnestness, finally the end shouting in jubilee.

SECTION XXIV. CENTRAL AND DOMED CHURCHES.

Their internal and external treatment from the beginning of the Renaissance in Italy until its end at the close of the 18th century.

The central structure is the last in the domain of absolute architectural forms, as the Grecian temple was the first. Its possibilities were not exhausted for a long time, it may give intermediate periods like the 19th century (indeed also the beginning of the 20th ?), which must again express the task of the 13th -- ever anew this great problem emerging, where the attempts of the Renaissance will appear as indispensable preliminary steps rightfully glowing. -- But indeed the Renaissance has developed near to absolute perfection the highest church form, essentially excelling all Gothic, the central structure, and has left it as a legacy to a future religiosity?

Burckhardt. Geschichte der Renaissance . p. 97. Stuttgart. 1878.

598. The Central Building.

For the acceptance of the central building as an architectural form of church was of importance in Italy the existence of so many antique round and polygonal structures, as well as the constant connection with the East, that offered sufficient incitement in S. Sophia, to name but one example of high rank. The "mystical fame" enjoyed by the pantheon in Rome and S. Lorenzo in Milan, the surprise at other and then better preserved central structures of circular or polygonal form, like the mighty domed buildings at the Baths in Rome (Baths of Caracalla and the so-called Minerva Medica), those near Naples (Baiae), also the Early Christian buildings in Ravenna, first kept alive the central construction in Romanesque architecture, made experiments in the Protorenaissance (Baptistery in Florence), then in the Gothic middle ages, even if it then remained only on paper or in a model, (Florence, Pavia, Loreto); its development was then undertaken by the commencing Renaissance.

The custom of regarding the baptistery as a central building and expressing this architecturally, contributed here to not allow the idea of the circular building to be lost, where also the art of vaulting large interiors did not fall into forgetfulness; for a central building was scarcely to be concei-

conceived with a vaulted roof.

The accenting by a dome of the crossings of mediaeval cathedrals in Italy, with the acceptance of the Latin cross as the ground form, has frequently been considered; but to regard it as a dominating entirety, as an architectural centre of a structural design, and also to erect it as such, remains the undisputed merit of oriental Early Christian architecture and its continuator, the Italian Renaissance!

878 "Absolute unity and symmetry, perfectly beautiful subdivision and enhancement of the interior, harmonious development of the interior and exterior without idle facades, and the most splendid arrangement of the lighting" -- these are the characteristic marks and peculiarities of these domed structures, that cannot be more strikingly represented by words, than Burckhardt has done here.

599. Basal Form and Characteristics.

The arrangement of the dome over circular or polygonal interiors remains the simplest solution for the structure, but whose unity is disturbed, if the altar be not placed at the centre of the plan, since then a special addition must be constructed for the altar. (See Madonna di Campagna near Verona, S. Maria at Busto Arsizio, Ulimta in Pistoja, S. Sebastiano in Milan).

These inconveniences and doubts vanish with the adoption of the Greek cross with four arms of equal length as the ground form, that eventually became the prevailing one.

But great structural undertakings in domical architecture do not begin with the personification of the ideal; they are completed works in newer form for what others have used as a basis; they are at the same time preliminary works for the future, but then not yet attained powers.

600. Beginnings; Sacristies and Chapels.

On sacristies and chapels the early Renaissance must experiment in its first independent and original works of central architecture; structures of little volume and with small domes, but therefore designed and executed the most charmingly and more beautifully in details.

Here is to be counted the sacristy of S. Spirito at Florence with octagonal plan, two series of pilasters over each other as a decoration of wall surfaces, and where the pilasters

...the structure to completion, and approving as the master of the beautiful details.

Also the security of St. Lorenzo tower, which came from the hands of Brunelleschi about 15 years earlier, the so-called old tower (1480) belongs here, that over a square plan has a so-called main vault on pendentives with round windows, but without interposed arch.

More interestingly treated is the work at the Pazzi Chapel in Florence, that likewise had the great Brunelleschi as its originator (1495). No central bell-tower in the proper sense of the word, but central emphasis on column form of plan with

vestibule and choir, where the ornamental axis is not placed likewise but transversely like the end of the building, the front with four columns. The investigation of the building's plan procedure, since there the rectangular tower is divided into three parts, indeed by two architectural zones into a square middle and two narrow side zones.

The two latter are constructed as tunnel vaults; the middle portion is built as a main vault on pendentives with four and round windows, crowned at the vertex by a lantern. The four side domes dominate the entire facade; the tunnel vaults are great and left secondary and subordinate it, and between them on the middle axis of the dome comes then the square choir, that is vaulted covered by a dome. Access on the lateral exterior is effected by a small door.

As the work of Brunelleschi may still be mentioned the choir from the studio of Rosselli and already been mentioned.

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set back from the corner (angle of polygon left free), above being a cloister vault with lunettes and a small lantern extending into the attic. Giuliano da Sangallo is named as the author of the plan and model, Cronaca as architect, who brought the structure to completion, and Sansovino as the master of the beautiful details.

Also the sacristy of S. Lorenzo there, which came from the hands of Brunellesco about 70 years earlier, the so-called old Sacristy (1425) belongs here, that over a square plan has a so-called melon vault on pendentives with round windows, but without interposed drum.

More imposingly treated is the work at the Pazzi Chapel in Florence, that likewise had the great Brunellesco as its originator (1420). No central building in the proper sense of the word, the chapel exhibits an oblong form of plan with vestibule and choir, where the principal axis is not placed lengthwise but transversely like the end of the building, the liturgic axis lying also in this direction. The architectural membering of the ceiling justifies this procedure, since there the rectangular interior is divided into three parts, indeed by two semicircular arches into a square middle and two narrow side areas.

The two latter are constructed as tunnel vaults; the middle portion is built as a melon vault on pendentives with ribs and round windows, crowned at the vertex by a lantern. The dome then dominates the entire design; the tunnel vaults at right and left accompany and buttress it, and between these on the middle axis of the dome opens then the square choir, that is again covered by a dome. Access on the liturgical axis is permitted by the beautiful and large entrance doorway with its precious carved door leaves at the rear wall of the charmingly vaulted portico, whose middle area is likewise marked by a dome, whose ornamentation with brightly colored majolica from the studio of Robbia has already been mentioned.

As the work of Brunellesco may still be mentioned the purely central plan of S. Maria degli Angeli in Florence (1451), where was intended a span of 51.8 ft. for the dome, assuming it to be octagonal inside and with sixteen sides externally. (See plan in the collection of polygonal churches. Fig. 939).

601. Dome over the Ground Plan of the Greek Cross.

The ground plan of the Greek cross is found in the present day in the church of St. Mark, Venice. It is a square with four arms of equal length, and a dome in the center. The arms are decorated with mosaics, and the dome is covered with gold leaf. The church is a fine example of Byzantine architecture, and its ground plan is a typical example of the Greek cross.

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The ground form of the Greek cross is found in the purest way in the construction of S. maria delle Carceri in Prato by Giuliano da Sangallo (1485). Surrounded by four equally large tunnel vaults, four transverse arches of these receive on pendentives a closed drum divided in panels and surrounded by a balustrade, above which rises a melon vault with ribs, round windows and a lantern on the crown. The drum appears externally, but not the vaulted form of the dome itself, that still enjoys the addition of a low conical roof as in upper Italy. (Fig. 832), ³¹¹that is also the case for the dome of the Pazzi Chapel at Florence, and in recurved form on S. Maria at Busto Arsizio.

Note 311. From Oettinger, W. von. Antonio Averlino Filarete's Treatise on Architecture. p. 465 (Fig. 7). Vicenza. 1890.

The domical (protecting) roof in vaulted form is shown in the earlier designs only by the dome of S. Francesco at Rimini, designed by L. B. Alberti, and that of the Cathedral for Bergamo by Filarete (Fig. 833), ³¹² as well as the ideal structure of the Sperandio. (Fig. 831 of the medal).

Note 312. From Kospeyres, Die Kirchen der Renaissance in Italien. Pl. 33).

602. Later Buildings.

The form of the Greek cross in the interior, but not on the exterior, is shown by the beautiful central Church of Madonna di Biagio in Montepulciano, which is not like a minaret as in the drawing of Filarete, but has two boldly treated bell towers at the right and left of the front arm of the cross, a work of the elder Sangallo (1518-1537), one of the most perfect central church buildings of the high Renaissance. (Figs. 834, 835), ³¹³ Not only the light admitting drum here appears externally, but also the calotte form of the dome with the lantern. The high, cylindrical drum is subdivided by closely spaced Corinthian pilasters, which are continued in the form of plain ribs on the vaulted internal surface. The window openings of the drum in the interior are not placed at the same height as on the exterior, also the internal main cornice of the dome lies lower than that on the exterior. Yet the internal and external window enclosures are connected by jambs slanting downwards to the interior, so that to the observer the view of the entire interior is possible from below, but which

cannot be justly termed an organic solution. (Fig. 835).³¹³ The like arrangement with the inclined jambs for the internal and external windows of the dome was permitted by the architect of S. Fedele in Milan.

603. Central Buildings with circular and polygonal domed Interiors.

A further group of mediaeval central structures is composed of the churches of upper Italy by Bramante and contemporary masters, a great number of which Strack has published in his work mentioned below.³¹⁴ They are sometimes arranged circular in the interior and sometimes polygonal, with domes resting on pendentives, or covered by cloister vaults, but all have the crowning lantern.

Note 314. Strack, H. Central und Kuppelkirche der Renaissance in Italien. Berlin. 1882.

As a first example may be mentioned here the choir structure of S. Maria delle Grazie in Milan, square in plan, with a drum animated by small double windows and with round openings in the surface of the vault, which shows a span of 59.1 ft. (Fig. 839). Then the externally circular and internally octagonal dome by Battagli (1490) of S. maria della Croce near Crema (Fig. 837); further the choir dome of S. maria near Saronno over a square interior on pendentives, first with a 12-sided drum animated by niches, above which are found round-arched lunettes with small round windows, above these extending the hemispherical, plain and pointed dome (Fig. 836). Likewise the Incoronata of Lodi must be named (Fig. 838), a building constructed octagonal internally and externally, covered by a cloister vault and crowned by a lantern, provided with a triple-arched portico between two bell towers, one of which is carried to a third of its intended height. Further are to be named:-- S. Maria at Busto Arsizio, S. Maria Coronata at Pavia, and particularly the beautiful sacristy building of S. Satiro in Milan with octagonal plan, four semicircular niches, upper arcade, cloister vault with round windows in the surface of the vault and a high lantern at the vertex -- an ornamental Masterpiece of Bramante -- with terra cotta busts and reliefs by Caradosso (Fig. 840);³¹⁵ ornamental treatment of the side of an octagon). The interior of this little structure appears to have shared the fate of S. Andrea in Mantua; it is now co-

coated light yellow, bronze-green and gray, but was originally indeed in the red tone of the terra cotta, perhaps with the use of blue color and gilding.

Note 315. From Sassina.

These domed structures also do not show the vaults externally; these are concealed behind the extended walls, which are mostly surrounded by galleries in the mediaeval sense, and are effectively animated. (Figs. 836-839).

Another combination is executed in the dome of S. Antonio in Locarno; above a square plan is obtained an octagonal form by pendentives, over which rises a cloister vault without drum but with openings for light in the compartments of the dome. (Fig. 841). And again another is offered by the plan of S. Vitale in Capolago (Lake Lugano), an octagonal plan with small chapels in the angles, a tall drum admitting light and closed by a cloister vault. The interior is magnificently decorated by stucco and painting, and is in good condition -- a charming view. (Plan, Fig. 843).

Plain and unimportant external surfaces are shown by the high enclosing walls of the charming creation of Sannicheli, the Pellegrini Chapel in S. Bernardino at Verona, where also again the dome disappears beneath the protecting conical roof, but where the lantern is made so much the more important. (Fig. 842).

A genuine calotte dome with lantern and a cylindrical drum admitting light is exhibited by the madonna della Consolazione at Todi. The plan shows a square middle area with a semicircular choir ending and three polygonal apses, thus the most strongly expressed central design. But not only for the dome is the form of vault exposed on the exterior; likewise for the four apses the quarter-spherical vaults are shown externally; they adjoin the square substructure of the main dome, that experiences strong reinforcement by the occurrence of the apsidal walls at its angles. A balustrade extending around forms at top the technical termination of this part of the building, over which rises the dome. The details of this lower part of the building and of the interior up to the drum indicate the early Renaissance; on the contrary, those of the dome are made rather Barocco. Yet the general effect is as if at one gush, if one does not investigate the details, of the

building and visits without dissecting it.

Popular tradition attributes it to Bramante; Rossi's researches in the archives did not give his cooperation; his name is also unknown in the building documents. The first mention of the structure occurred in 1508, when on Oct. 7 a payment was made to master Cola di Matteucci da Caprarola, who is otherwise made known as an architect of good reputation and prominence. The work was carried to the base of the dome in 1606, and in 1617 after a building period of more than a hundred years, the wonder-working statue of the Madonna was brought into the completed church. In spite of the lack of all proof, of this opinion by documents (just as at the Cathedral in Como), many believe it to have been originated by Bramante; Rossi absolutely refuses for the reasons given. But the negative result of the investigations does not afford an indisputable conclusion. There first remains the "matter of tradition," which of the two one will hold to be the architect of the church.

Allied in the arrangement of plan is the Madonna della Steccata in Parma (Fig. 844), that instead of the wall projections at the reentrant angles is externally square, and exhibits an internally octagonal chapel plan, which extends to the height of the semicircular projecting apses, so that the substructure of the dome rises above the apses in the form of a Greek cross. This and the dome itself show just the same form of vault as in Todi; by the use of a colossal order on the exterior and interior the architectural view is enhanced; only the main dome with its rather little colonnade around the drum appears too low, and allows the general effect to be inferior to that of Todi. The external wall surfaces of the building are plastered; only the window enclosures and cornices are of ashlar, whereby it loses something in the appearance of monumentality. According to Vasari, "as men say, the church was built after drawings and suggestions of Bramante." According to other traditions the building was indeed decided on in 1515 (thus a year after the death of Bramante), but its construction was first begun in 1521 after the drawings of the architect Giovanni Francesco Zaccagni da Torrechiara. The dedication by the bishop of Parma followed in 1539, the choir was enlarged in 1680. 317

Note 317. According to Brock, p. 10, 11.

The first of the three is a small, low, rectangular building, the second is a small, low, rectangular building, the third is a small, low, rectangular building.

have added on; but they are not enclosed, but are a flat and bold way down toward the middle area, so that the

and the three receive the same. The four areas have a similar character; the entire complex extends to the north of the

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Note 317. According to Struck. p. 9 et seq.

In idea the plan of the Madonna di Campagna at Piacenza shows something in common with the Steccata; for also here the adoption of the Greek cross causes the reentrant chapels to have added chapels; but they are not enclosed, but stand in a free and bold way open toward the middle area, so that four angle piers receive the dome. The four apses have rectangular endings; the angle chapels extend to the height of the arms of the cross, recalling little octagonal structures. Cross arms and dome show nothing of the vaulted form; they are concealed under low gable roofs and a conical roof. The substructure of the dome appears externally in two stories and is surrounded by galleries, in which lower windows are arranged to admit light to the interior; the upper serves as a passage, for animation and a richer appearance of the architectural view.

The church was erected in 1522-1528 as a brick structure; columns and cornices are made of ashlar. Likewise here must Bramante's name again cover it as architect; but this is not proved; even no other master is named in his place.

604. Domed building of circular plan surrounded by a portico after the antique custom. The Tempietto of Bramante.

On the contrary, Bramante's authorship is guaranteed for the very smallest central building, the so-called Tempietto, that Ferdinand IV of Spain and his wife Isabella caused to be erected in 1502 in the court of the Monastery of S. Pietro in Montorio at Rome. Of circular plan with a surrounding portico of 16 granite Doric columns, which support an entablature with triglyph frieze and a balustrade, the dome rises without any projecting roof in a beautiful and pure form on a drum animated by niches with shells and rectangular windows. The crowning termination is formed by a cap, consisting of arms, sphere and cross, without any arrangement for zenith light. 318

Note 318. See Leterowilly, Vol. 3., Pl. 323.

605. Umilta in Pistoja.

Under Sangallo's or Gronaca's influence stands Bramante's pupil Vittori in the building of the Umilta in Pistoja, whose interior Vasari completed, not very happily. As in the sacristy of S. Spirito in Florence, the pilasters set away from the angles of the octagon. 319

Note 319. On the architectural history and construction of the domed building, see Durm, J. *Grosskonstruktionen der Italienischen Renaissance*. C. Dome of S. M. dell' Umilta in Pistoja. Berlin. *Zeits. f. Bauw.* 1902. p. 13.

Instead of this arrangement or of broken pilasters in the angles, in other places columns are effectively placed in the angles (Fig. 845), for example in a chapel in S. Andrea at Mantua -- an antique and also a mediaeval motive. (Villa Hadrian near Tivoli). But the solution here presented stops above the main cornice, where one would expect the continuation or suggestion of the columns up to the compartments of the vault. The dry bands in the groins of the vault continue the strong lower accenting of the angles in the interior in not a natural way to the vertex. Peculiar is also there the arrangement of horizontal rectangular windows at the base of the dome and their intersection in the vault surface. Like Giulio Romano in the portico of Palace del Te, the master desired to avoid intersecting compartments, and commenced the vault on a projection supported by consoles. (Fig. 845 A, B).

Better appears the subdivision of the walls as well as the solution of the angles in the polygonal apses in the cathedral at Como. Both on the wooden model of Redari as well as in the actual execution is an endeavor for a bold continuation of the angle columns in the angle ribs.

Of the central and domed buildings of upper Italy, besides the little Pellegrini Chapel already mentioned, yet others of the master Sanmicheli play a good part, like the round Church of Madonna di Campagna near Verona (1559), and the dome of S. Giorgio in Braida at Verona.

Taken for size, must be named as one of the most important works in the domain of domical construction, the octagonal dome of the Cathedral in Montepulciano with a span of nearly 32.0 ft. According to Dianoux³²⁰ this dome was built of brick, and over it was to rise a second one covered by sheets of copper and lead. Until its completion, the structure was furnished with a temporary roof, that burned and destroyed the structure. The rebuilding came into the hands of Fontana, who executed it in the taste of his time. The thickness of the walls of the drum amounts to 11.2 ft.; at a height of 25.6 ft. from the base of the dome 59.0 ft. high are inserted two iron rings,

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whose joints are visible in the surface of the dome. The angles of the octagon are held by these and thus at least the bending outward of these is somewhat obstructed.

Likewise Solari's dome of S. Maria della Passione in Milan shall find mention here.

A central plan of the richest kind, first in connection with the transverse aisle and the choir, was developed in the Cathedral of Pavia (Fig. 847), which is proved to have been built by Cristoforo de' Rocchi, who had the conduct of the building in his hands from the day of laying the corner stone (June 29, 1488) until his death in the year 1497. His successor was the great Amadeo, whom we have already learned to know in Bergamo and at the building of the Certosa near Pavia. The wooden model of Rocchi for the building is preserved, and Fig. 847 gives us an idea of what was intended, but was never completed. The grandly conceived pyramidal structure indeed allows to be seen certain changes in details, that could properly be made.

606. S. Maria di Carignano.

As a central structure purely, and free from all that could weaken this character, is S. Maria di Carignano in Genoa, erected by Alessi in 1552, whose general view was given in Fig. 735. The motive of S. Peter in Rome is therein expressed "in an entirely free and novel arrangement," with greater beauty of the interior. A large principal dome dominates the square plan with its four small side domes, of which now merely the lanterns take part in the grouping. Originally the plan was to be flanked by four towers, but of these only two were erected, and those in a changed form. 321

Note 321. Durm, J. Dome of S. Maria di Carignano. Zeits. f. Bauw. 1902. p. 161.

607. S. Peter in Rome.

But the highest cast in this domain of church architecture was made by the two great masters of the Renaissance, Bramante and Michelangelo, in their designs for S. Peter's Cathedral in Rome. (Fig. 848). What Bramante desired is shown to us in his first plan in Fig. 849,³²² and what Michelangelo wished by the plan in Fig. 850,³²³. While Bramante partly lost himself in small things, Michelangelo drew with firm, conscious and secure strokes his clear and simple ideas, and was so fortunate as few mortals, in that what he planned was also exec-

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From this it is seen that 176, 671, 075, 911.

866 executed, even if he could no longer see it. Of the effect of the work as a central building, comprising the choir and two arms of the cross, Fig. 848 may give an illustration; grand and mighty in lines and wonderful in elevation, the dome showing the most beautiful outline in the world! Forty years it stood in its entire effect as a central structure; then first 887 Paul V in 1606 had the present nave built before it -- more unfortunate for the exterior than the interior, which even in its lengthened arrangement of plan can never lose its grand effect.

Note 322. From Hauser. p. 43, 44.

Note 323. In *Il Tempio Vaticano e sua origine*. Rome. 1694. From this is Fig. 851, after p. 417.

(To add an architectural history of S. Peter's within the limits given in this volume is impossible; reference must here be made to the numerous and extended publications of earlier times by Costaguti, Ferraboschi, Fontana, Rocca, and as they may all be named; then to the larger and more recent works of Simil (*Le Vatican*), H. von Geymüller (*Die ursprüngliche Entwürfe für S. Peter in Rom*), the researches of Jovonovitz, Garnier and many others. For the technical part see also the Essays of Poleni as well as the author's "*Zwei Grosskonstruktionen der Renaissance*." *Zeits. f. Bauw.* 1887. p. 481. But to every visitor in the eternal city we recommend very particularly the inspection of the great wooden models of the different masters preserved in S. Peter's. A permit therefor is now freely given to technical colleagues by the majordomo of the Pope; the entrance to the models is from the stairway leading to the dome. What is to be said technically was done in the first Sections of this volume, with the addition of the necessary drawings and explanations).

887 At 72 years of age, Michelangelo took charge of the building (1547) and retained it until his death (1564), "so that by his resignation some scoundrels might not be pleased, since the building would remain entirely completed." Not only his fame, but rather the intelligence, art sense and the high culture of his employers protected the design throughout his life, until finally Sixtus V completed the dome, unfortunately with the omission of the beautiful figure ornamentation on the main cornice, that the model so splendidly exhibits. The mighty o

ones of the earth could also give a tunnel and perhaps
 another of S. Peter were great enough to be free from such
 possibilities.

Grubbs and Michaelis did not have their work spoiled
 by later collisions, but of one or two others, of the
 same or less than S. Peter. They were still free from any
 "to create something new in the spirit of a
 new spirit, and in the spirit of a new spirit, and in the spirit of a new spirit."

These matters had never improved, and for which they would
 have found and have found at the intelligence of possibility.
 For the entrance leads with the free columns would be

as to be seen on the corner ending of the Julian year of
 1800, what this became is shown by Fig. 851 after the illness-
 tion in 1800: 852 West German and German attempted on
 the clock tower and the line, can be seen and read in the
 the works mentioned below. 853

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ones of the earth could also give a bungler the preference over a good man, and abandon him for personal reasons; the authorities of S. Peter were great enough to be free from such possibilities.

870 Brunellesco and Michelangelo did not have their work spoiled by later colleagues, that of one on his Palace Pitti, of the other on his dome of S. Peter. They were still free from many modern endeavors "to create something new in the spirit of the first masters," and to bring forth things, which the original masters had never approved, and for which they would have blamed and have laughed at the intelligence of posterity.

How the entrance facade with the free colonnade would appear is to be seen on the copper engraving of the jubilee year of 1600; what this became is shown by Fig. 851 after the illustration in Fontana; ³²³ what Bernini and Maderna attempted on it with clock towers and the like, can be seen and read in the works mentioned below. ³²⁴

Note 324. Gurlitt, G. Geschichte des Barock, Rococo and of Classicism. p. 327, 351-353. Stuttgart. 1887.

Many things on the exterior may not be happy in the interior, but the dome dominating all permits this to be forgotten; it is indeed Michelangelo's greatest work, by which he "satisfied the longing of the entire Renaissance".

Comparison with other buildings of great dimensions best allows us to recognize the scale of the magnitude of S. Peter's. A bay of the five-aisled Minster of Ulm with its system of flying buttresses can be placed within the dome of S. Peter, which then does not reach the transverse arches of the crossing (Fig. 852); twice the height of this minster to the ridge reaches only to the foot of the lantern. The bronze canopy below the dome is about 98.4 ft. high to the top of the cross, and equals in height Palace Farnese in Rome, measured to the roof eaves. (Fig. 853).

If we further make a section through the five-aisled Cathedral of Bourges and place it on one made through S. Peter's dome (Fig. 854), it does not entirely cover the latter. What an outlay of supports, flying buttresses and buttresses are necessary for this mediaeval masterpiece to span the same width, that is solved in S. Peter by a single vault, entirely aside from its height. What conditions, what squandering of

materials on the one hand, what simplicity and clarity in the construction on the other!

Yet a glance at the internal decoration in contrast to what was undertaken in Florence. In Rome a cheerful and dignified magnificence; white marble, stucco and gold in the aisles, polychromy being reserved for the dome, but there are mosaics of the most splendid effect with white and uncolored daylight, and what is the chief thing, the architecturally correct design for the subdivision of the surface of the vault (Fig. 855) proudly soars the dome thereby; it receives life and movement, the heaviness is removed. And in Florence? On a badly lighted ground a confusion of figures in its entire desolation, without enclosure and without composition, withal lacking in scale!

608. Domes with single and double shells,.

On the massive domes with single and double shells, constructed of stone, where ceiling and roof were one, it was established, that they should also externally show the kind and form of the vault: a consequent solution resulted in the construction of the internal dome with ashlar or bricks whose form, also partly for statical reasons, was concealed behind vertical masonry.

609. Masonry Dome behind vertical masonry with a protecting wooden Roof.

This was itself covered again by a conical wooden roof covered by tiles, so that a light temporary structure must conceal and protect a monumental one.

610. Doubled masonry internal Dome with protecting wooden Roof and crowning wooden Lantern.

Of a third kind are doubled masonry domes built over each other with great openings at the crown, above which rises a protecting wooden roof covered with metal, and crossed by a lantern. These were preferred in the last phase of the Renaissance, in the Barocco period, not only in Italy, but also in France, Germany and England.

For the first kind may be given as an example the little central Church in Maser after the design of Palladio, which with a circular internal form exhibits walls animated by niches and half columns, above which extends an open gallery. Externally a flight of steps leads through a Corinthian portico

to the interior, two small stairways towers rise like the so-called "ears" of Bernini behind the pediment of the front columnar projection. The great Bernini is therefore the imitator of the much abused motive. The form of the dome with its stepped construction recalls that of the pantheon at Rome (Figs. 856, 857).

611. Superga near Turin.

As an echo of this advanced phase of the last epoch is to be included the great Burial Church of the kings of Sardinia, the Superga near Turin, vowed by Victor Amadeo II, built in 1717-1731 by Juvara and dedicated in 1749, with its interesting plan and the hollow construction of the dome. Notable is the solution of the transition from the lower octagon to the round form without the aid of pendentives, by inserted columns with circular architrave resting on them, and a likewise circular cylinder rising to the dome. (Figs. 858, 859, 860; view, plan and section).

The illustrations give everything necessary for an understanding of the external architecture, the plan and the section of the domed structure. A Corinthian tetrastyle portico on a subdivided terrace structure is placed before it, which effectively prepares for the interior, and beneath its protecting roof one enjoys a broad view over the valley of the Po, the city of Turin and the field of battle, where in the year 1706 Prince Eugene with Victor Amadeus obtained the victory against the Spanish-French army, for which the king vowed the building of the church.

The central structure with the dome placed on a high drum, flanked by two slender towers, is here splendidly expressed. Pilasters, piers, columns and entablature are of white limestone, but the wall surfaces are plastered, the external shell of the dome being covered with lead. In the interior polished columns of gray veined marble are placed erect on pedestals of reddish-yellow marble, the walls and ceilings being plastered and plainly painted. It is said of the building, that it is distinguished "by the wisdom and nobility of the design, and by the harmony that prevails in all its parts. The span of the dome amounts to somewhat more than 65.6 ft., the height of the structure to the apex of the cross is 281.1 ft.; its execution is good and substantial, the dome being in two she-

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814 shells as at S. Peter and vaulted in bricks. Eight pairs of projections connect the two shells of the vault (Fig. 860), which join at an upper ring of masonry, from which rises the lantern. In the interior the transition from the octagonal lower story to the circular drum is effected by columns set in the reentrant angles (Fig. 860). The coupled projections are also expressed on the external surface of the protecting dome by the pairs of columns on the drum.

From the antique tradition, according to which the ceiling and roof of a vaulted structure form a united entirety (Pantheon), from the custom of the early Renaissance (Cathedral of Florence) to construct the protecting dome likewise of stone, Juvare also did not depart in his domical construction, while men were unfaithful to this principle in Venice, and constructed the external projecting dome of a lighter and more perishable material, of wood with a covering of metal. men had in this way more freedom in the treatment of the two parts, if they made the dome enclosing the interior independent of the external protecting one. 326

Note 326. See Die Superga bei Turin und Meister Filippo Juvare aus Messina. Studies in Art and History dedicated to Friedrich Schneider on his 70 th birthday by his friends and admirers. Freiburg. 1906. Essay by Josef Durm).

To the protecting dome can be given any form and height, without taking into consideration the internal dome.

612. Stone Domes with wooden protecting Domes.

Old Venice here precedes with the good example of its Church of S. Marco. Men would not and could not go higher with the monumental stone covering of the interior than was done, and still could give the exterior an imposing form, that could only be attained by the wooden roof structures. The protecting domes of S. Marco indeed arose under the influence of the East, where the separation of the domes and their construction in stone and wood was already everywhere in use, a mode of construction, to which then also firmly adhered the architects on the Shores of the Adriatic.

613. Wooden Domes of S. Marco.

Thus after the model of S. Marco (Fig. 861), for example, we see on the Church of S. Zaccaria the protecting wooden dome constructed in a different form and rising above the main

dome. At S. Maria dei' Miracoli above the masonry dome is a wooden protecting dome built of logs; thus on buildings belonging to the 15 th century. S. Giorgio dei Greci has the wooden protecting dome directly over the masonry dome, etc.

614. Dome of S. Maria della Salute in Venice.

S. Maria della Salute by Baldassare Longhena (1630) has an internal dome of masonry and another wooden dome covered with lead. At S. Simeon Minore (1718) both internal and protecting domes are built of wood, and only the conservative Palladio at his Church Redentore constructed the walls and domes of bricks. Also at the previously mentioned little central Church in Maser (Figs. 856, 857); plan, view and section), he appears to have remained faithful to monumentality on account of the antique and the early Renaissance, and built in accordance with their preserved principles. (He had there indeed a presentiment of the so-called "ears" of Bernini!). The Church Val de Grace, and the Dome of the Invalides in Paris (Fig. 862) as well as S. Paul's Church in London, have wooden protecting domes, with all other monumentality of the building, with stone and even doubled internal masonry domes. In Vol. 2 of the great work "*Le Fabbriche piu cospicue di Venezia*", measured, drawn and engraved by the members of the Venetian Royal Academy of Fine Arts (Venice, 1820), is a drawing of S. Maria della Salute, tolerably fully represented, which gives everything essential. In spite of its grotesque volutes and its other peculiarities, it already attained world fame by its master Longhena (born 1602), to be and to remain of high interest for the history of architecture.

A learned Frenchman, de Raymond, in an Essay printed in 1819, made a comparison between the construction of its dome and the later built Dome of the Invalids at Paris, which results in favor of the Venetian building in statical respects. The material in the work mentioned is not in all places so entirely complete and clear, that without further local investigations position could be taken on this question, that moreover requires mathematical researches, and would lead too far here. What is there technically of interest and value is given by Fig. 863; the plan, the geometrical and statical section, from which it results, that the proportion of the interior-- diameter to height -- exactly amounts to 1 : 2, but also further still the

arrangement of the buttresses as consoles, and those of the dome are visible together with its substructure.

701 The internal dome is of brick, the protecting dome being constructed of wood and covered with sheets of lead. (See *Fabbriche di Venezia*). The octagonal form in plan is carried out in the interior as well as on the exterior to the attic over the main cornice of the drum. The attic wall and the form of the dome in plan are circular, on the contrary (Fig. 864, photograph after Filippi), without a particularly marked subtle architectural transition. Behind the octagonal balustrade directly rises the circular structure.

The statical section shows us the strength and safety of the arrangement. Its existence for 381 years gives a satisfactory and sound proof of the calculation and assumptions. If in the building any judge sees "the continuation of Palladio's principles of church architecture," this is his own affair, but if he declares that the dome is externally round and internally octagonal and is only constructed of wood (see Josef, *Architekturgeschichte Italiens*, p. 378), this is to be lamented, especially when it is then said, "that to the technically skilled connoisseur the humor is thereby spoiled." The brief technical remarks on Fig. 863 may here be repeated again in the text:-- "For the foundations were employed 1,156,657 tree trunks of 9.8 to 13.1 ft. long, which were bound together by iron bands and chains. This work was executed in the space of two years and two months." (1656).

615. Serlio on Domed Churches.

Serlio, the academic, gave us not only his views on house architecture illustrated by examples, but he also made known his preferences for churches, that were already disputed in the description of S. Peter. Also in these are some noteworthy, that are characterized by a skilful use of the motive. His facades are of antique structure, with or without the addition of towers and domes. In his "Book fifth of Temples" he starts from the central building, first gives the merely round structure, subdividing this internally and externally by niches between double pilasters, with adoption of a lighting of the interior by zenith light. To the purely circular building he then adds four apses and crowns its vertex by a lantern. The round plan is followed under the same assumptions for the fa-

facade by the oval plan with niches; after this are arranged pentagonal, octagonal and hexagonal plans, whose structures are spanned by cloister vaults and crowned by lanterns. Then are given plans with square exteriors and octagonal interiors, with square chapels at the four angles, also such with Greek or Latin cross forms and domes over crossings; likewise three-aisled with towers and low domes without drums throughout, further single-aisled plans with two semicircular apses at the ends, vaulted porticos, with rectangular projections at the sides. A representation of the plan and superstructure of a pentagonal central church is given by Serlio on p. 206, and according to him is given in Fig. 777 the facade of a church without tower, and in Fig. 740 one with two towers.

For the vertex openings of round and polygonal churches, he requires for lighting the interior a width of one-half its drum. In covering the dome, this should be arranged according to the native materials, but under all circumstances a covering with lead sheets deserves preference.

Through the circle of academies and theorists with their good advice and recipes, also in the domain of church architecture, there broke the late Barocco masters and indeed the most extreme leaders, Borromini (1599-1667), Bernini (1598-1680) and Pietro da Cortona (1596-1669). On them depend the very gifted Carlo Rainaldi and Guarino Guarini (1624-1683); the last named even sought to excel his model, Borromini.

Columnar churches became more rare, the Greek cross favored for the plan, the interiors wide and high, skylights and high sidelights were sought, the decoration was without color or was overloaded with painting and gilding. Circular and elliptical plans were preferred, the curvature of facades was cultivated, the side aisles were mostly omitted, the chapels were changed into niches, the side facades as simple as possible, at most being animated by a pilaster order. (Also see Redtenbacher, R. Architektur der Italienische Renaissance. Sections 116-121. Frankfurt. 1886).

According to C. Gurlitt, "the contest excited the artists, and the results the friends of art."-- Curves and rickety details at any cost; instead of regularity often only nonsense! The break with the antique and the principles of the old masters (Alberti, Palladio, Vignola) was completed. But the skel-

skeleton yet remained standing, though the execution became different. The facade of S. Agnes in Rome would be held by no man as an exotic and entirely new organism, a structure composed with new forms of details. It remained a work of Borromini in the domain of central church architecture, which has made the master immortal. How grand in idea and how beautiful for the structure is also developed its plan! On the other hand his church architecture of S. Carlo alle Quattro Fontane in Rome suffers from excesses, where almost every straight line is abandoned. How proudly stand the colonnades of Bernini before the facade of the Cathedral of S. Peter! Guarini's circle of activity is Turin and his patrons were the princes of the House of Savoy, also in the church domain. The central building also appeared to him as the highest, as the most worthy of his aims, only the means of expression being different from those of his predecessors, but he knew not how to free himself from the basal elements of the Renaissance. His details are not spiritless, and not new, only thoroughly convulsed. (Figs. 209, 870). If he produced no school on his part, he has in the grave at least the satisfaction, that after two hundred years and more, at the Turin's World's Exposition (1 (1902) so many intelligent young connoisseurs found his style new to them, and were incited to imitate him. And now on many buildings on this side of the Alps are suspended trophies of his works, that Guarini revived would recognize without difficulty.

616. Domed Buildings of Guarini.

Singularly arranged are his church buildings, S. Gaetano, designed for Vicenza (Fig. 869), and especially the works at Turin, with which we have to reckon:-- S. Sudario, the Tomb Chapel of the House of Savoy, and the Church of S. Lorenzo. The plan of this (Fig. 866) may show what the master desired, and the reproduction of the photographic view of the dome from below, (Fig. 868, after Fot. d'Arti grafiche in Italia Artistica, Turin, p. 61, 1911), will tell how great his ability was. The geometrical section (Fig. 867) does not allow the effect to be entirely recognized. One might decide on Moorish influences or acquaintance, if one without prejudice places beside it the section of the chapel before the mihrab of the Mosque at Cordova (Fig. 865). Was then Arab art in interiors a pres-

...for Lisbon (1914, 1920). This description of the house is
 ...was at least not without some problems, while the fact
 ...of the so-called villa before building, or at least on some-
 ...and in classical style, and yet still remain somewhat origi-
 ...all, as shown by the design for a house on a small surrounded by
 ...colours drawn by him (fig. 191).

One cannot be entirely satisfied concerning the last man of a
 ...the innovation of each work, especially today, when so many
 ...other things are done. Also things contemporary seem now
 ...of the present. Vanity and nervousness, false con-
 ...of honor and number led to apocryphal and artistic
 ...only the latest school account again time of time. By Jovara
 ...the architect. The architect is succeeded by a last ill-
 ...being of the late Baroque.

There was again the fate of the beautiful on the capital and
 ...of testing building.

Then it was said, that the procedure of S. Maria and
 ...in Venice resulted from the combination of the first and
 ...and Venice, and reference was made to the fact of the Moscow of
 ...1900 (?) constructed of wood and brick, the case of
 ...these processes must be still further expanded, but in any way
 ...be called a new (the French house, the Russian the Italian).
 ...Vol. 8 of this Handbook. The mode of ex-
 ...tion and the choice of construction appears more important.

III. Construction of the Russian house.

This appears simplified and wasteful of wood in the first
 ...beginning in Italian church buildings. (I know of no Italian
 ...val for roofs over the halls in Venice and Padua), first the
 ...which still remains in the 19th
 ...1900), only later being freed from this. Then for example
 ...the second hand house of S. Maria de' Miracoli (Venice, 1443).
 ...examines a low roof covered by a series of horizontal lines,
 ...with a small expenditure of structural timber (fig. 191); and
 ...the house of S. Antonio in Florence, the second stage
 ...second time on the extension of the gallery room on which a

presentiment of that of Guarini? Yet he was well acquainted with the Iberian peninsula, which is recalled by his church design for Lisbon (Fig. 870). This supporter of the high Barocco was at least set before great problems, while the later men of today must exercise their wits on peasants' houses and on the so-called villa colony buildings, or at most on warehouses with goosepen facades. Moreover Guarini could also design in classical style, and yet still remain somewhat original, as shown by the design for a dome on a drum surrounded by columns drawn by him (Fig. 871).

One cannot be entirely silent concerning the last men of the innovation at that time, especially today, when so many similar things are done. Also things contemporary then now coincide with the present. Vanity and nervousness, false conceptions of honor and hunger led to hypochondria and suicide, only the later school becoming again free of this. By Juvara and Vanvitelli comes the quiet of a cemetery over minds and over architecture. The spasmodic is succeeded by a last flickering of the late Barocco.

That was again the fate of the beautiful on the earth! And the time of testing begins.

When it was said, that the protecting dome of S. Marco and others in Venice resulted from the connection of the East and the West, and reference was made to the dome of the Mosque at Ispahan (1600 ?) constructed of wood and bricks, the zone of this procedure might be still farther extended, but which may be omitted here. (See Franz Pacha. Die Baukunst des Islam. P Part II. 2 nd half of Vol. 3 of this Handbook). The mode of execution and the choice of construction appears more important.

617. Construction of the Wooden Dome.

This appears complicated and wasteful of wood in its first beginnings in Italian church buildings. (I except the mediaeval log roofs over the Halls in Vicenza and Padua), like the French, which still suffered this reproach in the year 1706 (Fig. 862), only later being freed from this. Thus for example the protecting dome of S. Maria de' Miracoli (Venice, 1493), exhibits a log roof connected by a series of horizontal ties, with a small expenditure of structural timber (Fig. 861); and at the dome of S. Agostino in Piacenza are arranged stepped stone ribs on the exterior of the masonry dome on which a

• 5000. 10

series of horizontal ties are laid, which bear the roof timbers (Fig. 862). But this occurred 100 years earlier, when the French still made use of a heavy load of intersecting struts, angle bands, supported purlins and the like in their protecting domes! (Fig. 862). They did not deduce a useful employment in this domain.

618. Stone lantern on wooden Supports with wooden Roof of Dome.

The problem for the protecting dome, at least to make the lantern of monumental form, and to limit the construction of the surfaces of the dome roof to woodwork alone, could also be proposed. It was indeed an idea lying near this, that of at most securing as much as possible the parts of the dome exposed to wind and weather, which could only occur by the use of resistant materials, of stone at that time. The lantern must be afforded position and support on a monumental substructure, i.e., the lantern be supported by the vault. The model was given in the Baptistery of Pisa. (Fig. 873).

619. Dome of the Pantheon in Paris.

Jacques Germain Soufflot, the mathematician and constructor, made use of this in 1757 at the domed Church of S. Genevieve (Pantheon) in Paris, which has a span of 72.2 ft.

620. Dome of Cathedral of S. Paul in London.

After and before him, the greatest English architect, Sir Christopher Wren (likewise well known as a mathematician and constructor) had shown the way at the dome of S. Paul's Cathedral in London (1675-1710), for a span of 101.7 ft. for the dome (Fig. 874).

After the procedure of Michelangelo at S. Peter in Rome, Wren employed the iron ring for his dome in the form of a sugar loaf. In 1680 J. H. Mansart erected the Dome of the Invalids in Paris, and there opened the lower internal dome by a wide opening at the crown with a view toward the upper stone dome, closed at the vertex. Likewise the priority of invention (1675 against 1680) appears on the English side, where Wren opened the upper dome toward the lantern. It is singular, that he did not proceed a step further and also make the external protecting dome monumental, instead of the executed wooden construction. Had he perhaps the idea, that the thereby occasioned greater weight of the dome roof would too strongly

load his supports? Soufflot ventured it, though first 72 years later.

621. Modern Dome over crossing in Novara by Antonelli.

In Italy the newer technics made an attempt in the spirit of Wren with the Church of S. Gaudenzio at Novara, built in 1570 by Pellegrino Tibbaldi, which the Professor of Architecture Antonio Alessandro completed in the crossing dome of the said church in a peculiar way in 1888. We give from the journal "Ingegneri Civile e le Arti Industriali" (3rd year, Pls. 12, 13) a reduced section through the tower-like structure, that is carried to a height of 397 ft. to the apex (Fig. 876).

It was likewise Antonelli, that executed the colossal iron construction of the Synagogue in Turin in 1881, transformed into "National Archives."

The modern period with its new means can venture in this sense greater things, but whether all will have the same durability as with the employment of the old, is another question.

As the last illustration in our series, like the first, is given an ideal design by an unknown master for the central structure (Fig. 877), which dates from the last phase of this epoch. It exhibits a different appearance, but not a bad one.

Section XIV. Carbon Equipment and Furnaces.

The internal equipment of the furnaces employed in a...
 Also... the... of the...
 ...
 ...

... by ...

... in the... of the...
 ... to the... of 6 is placed a... with...
 ...

... (1914-1915).

622. Basis of Stone and Metal for Concentrated Water.

... the... of...
 ... from the... like... or...
 ... by... like... They are...
 ... of... in which the...
 ...

Of metal in the... is the...
 ... at... which is held by an...
 ... (1914-1915) ...
 ... in the... by a...
 ... a... of this kind.

(1914-1915).

Of the... as the...
 ... (1902, 1903) in the...
 ... where the... of...
 ... and is...
 ... in...
 ... of the...
 ... were...
 ... that could be given to a...

... (1914-1915).

Similar to... the...
 ... at... very...
 ... of the...
 ... in a...
 ... (1914-1915) ...
 ... is...
 ... with a...
 ... (1914-1915) ...
 ... by the... of...

Section XXV. Church Equipment and Furniture.

The internal equipment of the churches enjoyed in a particular measure the favor of the new style, "which is the more easily explained, since the ornamental was just the weakest side of the formerly prevailing Italian Gothic, and that most infected by caprice."

We enter the interior, in the vicinity of the entrance doors to the House of God is placed a stoup with consecrated water, with which those entering sprinkle themselves in token of purification (Fig. 878).

622. Basins of Stone and Metal for Consecrated Water.

Basins for holy water were made of stone and metal; they most simply project from the wall like consoles, or as smaller basins borne by supports like candelabras. They are isolated creations of art industry, in which the formative art appears with the finest means.

Of metal in the simplest form is the basin constructed in the Church Fontegiusta at Siena, which is held by an arm projecting from the wall (Fig. 879); wrought from marble is the beautiful basin in S. maria Novella in Florence, half let into the wall, the hole in the wall being covered by a fluted shell; in its simple beauty a classic model of this kind. (Fig. 878).

Of the detached marble basins, as the richest are to be designated those made by Federighi (1462, 1463) in the Cathedral at Siena, where the ancient tripod form of support is reanimated, and is furnished with the most splendid sculptures. The little fishes carved in low relief within the basin must indeed be attributed to the excessive love of the artist for ornamentation. The pedestals were formerly held to be antique, the greatest compliment, that could then be given to a Renaissance artist. (Figs. 881, 882).

Similar to these but somewhat simpler are the holy water basins in the Cathedral at Orvieto; very noble in design is that in the right transept of the Cathedral in Pisa by Rossino. (1518). In the form of a little ship in a rich candelabra support is that in S. Trinita at Florence (Fig. 880). Peculiar with a canopy above rich mural decoration is constructed the basin in the cathedral at Palermo (Fig. 883). In the Santo at Padua are two basins adorned by the statue of S. John Baptist

954 and the figure of the Saviour. On a basin by Alessi in the a
 915 Certosa stands an obelisk in the basin instead of the figure.
 Everywhere prevails the greatest diversity in the external a
 appearance of the same object of use. As art works would still
 be worthy of mention the holy water basins in the Certosa near
 Florence, in the Cathedral at Lucca, in the sacristy of t
 the Cathedral at Empoli, and that of S. Peter at Rome, besides
 many others in various churches in Italy, that merit the
 same praise.

623. Sacristy Fountains.

Consecrated fountains (lavatories) for washing the hands of
 the priests, especially before the mass, as well as intended
 for cleansing the sacred vessels, often in form of a holy wa-
 ter stoupor baptismal font, but always with water taps and
 collecting basins, were placed in the vicinity of the altar,
 in the sacristy or its vestibule, enclosed by stone in rich
 architecture, sometimes being in variegated majolica.

716 "A work of simple design of genius" is the sacristy founta-
 in in S. Lorenzo in Florence, attributed by Müntz to Antonio
 Rossellino, constructed of white marble with an enclosure and
 a circular back of red porphyry. It consists of a tank suppor-
 ted by female figures with bats' wings and fish bodies. A li-
 on's head adorns the front surface of the basin, from which
 rises a candelabra on which two dragons cling together and c
 cast the water into the tank. The back panel is surrounded by
 an oaken wreath, and over this stands an eagle with outspread
 wings.

717 Besides this composition in more sculptured sense may be m
 mentioned a related one; the beautiful consecrated fountain
 of terra cotta (majolica) in the sacristy of S. Maria Novella
 at Florence, a work of Robbia executed in the form of a shri-
 ne with Corinthian pilasters, above which rises a semicircular
 tympanum with magnificent colored garlands of fruit and cupi-
 ds. On the pilaster capitals formerly (1866) were to be seen
 718 still vestiges of gilding, whereby a richer harmony of color
 was produced in the variegated majolica. (Fig. 885).

As the simplest example is to be named a marble lavatory f
 from Loreto, enclosed with two angels by a wide band of roses.
 (Fig. 884). In the Badia near Florence, in the vestibule of
 the refectory, is to be mentioned the beautiful wall fountain

of Francesco di Simone (1456-1464), made of sandstone; then in the Certosa near Pavia the lavatory in the first side chapel on the left, in the form of a shrine with palisters; further the great lavatory with long trough in the niche covered by a coffered tunnel vault and flanked by ribs, and yet numerous others.

624. Baptismal Fountains and Fonts.

The baptismal fountains (piscinas) were basins with running water, particularly in the baptisteries of the olden time, in the place of which the "baptismal font" appeared, made of dense stone or metal. These found place at the entrance in the churches of the middle ages, and were formed as cylindrical or octagonal tanks, or as round and polygonal bowls or basins. An example of the simpler and smaller kind with a John the Baptist on the cover is preserved in Todi (Fig. 886), and another simple one made of marble and bronze is in the Church S. Marco in Venice. (Fig. 887).

A richer composition with octagonal receiver, from which rises a domed structure adorned by niches and figures, is the Font del Ballerino in chapel S. Giovanni in the Cathedral of Siena, executed by various masters in the time after 1480, (Fig. 889), and as a work entirely in bronze, we find on the left of the entrance of the great Pilgrimage church in Loreto the extremely and richly ornamented basin made by Tiburzio Vercelli and Giambattista Vitale, with four statuettes of Faith, Love, Hope and Stability, as well as crowned by a group of figures representing the baptism of John (Fig. 890).

Especial mention is merited by the baptismal font or better the little baptistery in the middle aisle of the Cathedral at Como, in the form of a Corinthian monopteral temple with 8 marble columns, that was executed in the year 1596 by Leonardo da Casara. Beside the little temple stands the mediaeval baptismal font in the form of a crouching lion with a basin on his back (Fig. 888; for the documents see D. Santo Monti, text page 222. Como. 1897).

625. Pulpits in the Interior.

The pulpit (suggestus) in Italy in the 13th century was already attached to a pier of the north or south side of the middle aisle. It consisted of a base with closed balustrade resting on columns, and was accessible by a stone stairway.

The Renaissance gave up this form and set the pulpit coffer on a single support, or it suspended it from a pier or a wall surface of the church and proceeded in the development from the simple to the magnificent appearance of the highest rank.

626. Stone and Wooden Pulpits.

Execution in stone was given preference in the good period; one of wood or without the sounding board mostly belongs to the Barocco period.

627. Hanging Pulpits.

The old form is yet recalled by the bronze pulpits of Donatello in S. Lorenzo at Florence, that rest on columns and were only made in this form on account of the reliefs.

As an example of a simply beautiful hanging pulpit may be mentioned that of Brunellesco in the refectory of the Badia near Fiesole (Fig. 892), and as the first work the wonderful marble pulpit of Benedetto da Majano in S. Croce at Florence, (Fig. 893), executed in white marble with gilding, inlaid glass pastes, and insertions of red porphyry.

As an equally meritorious piece and as an example of a marble pulpit resting on a single support may be named that built by Mino da Fiesole and Antonio Rossellini in the Cathedral at Prato (Fig. 894). From a similar idea Antonio Gagini proceeded on the white marble pulpit in the Cathedral at Messina, but which corresponds to the time and already shows eccentric forms on the lower part, and has an octagonal instead of a circular enclosure. These stone pulpits are also without sounding boards, like almost all of this period of the Renaissance in Italy. Fabrics stretched above them (vela), that frequently extended over one or more bays of the church, must here protect from echoes. The later pulpits, for example in Genoa, all have a rear wall with spring door, which forms three sides of the polygonal pulpit enclosure and support the sounding board. We find a similar arrangement in the Church S. Spirito in Rome; only there the rear wall is directly closed by the opening of the door. 628. *Pulpit, permanent*

A detached pulpit of the simplest form is possessed by Ss. Nereo ed Achilleo in Rome, to which six winding steps ascend, thus being elevated but little above the floor of the church, similarly to those previously named in S. Spirito, but that bears Barocco forms. 327 With the lower position of the pulpit

were connected many advantages for the speaker and the hearers, according to the ceiling and height of the interior. The base of the simple pulpit consists of a simple base as a subdivided cylinder, on which rises the octagonal pulpit enclosure, whose balustrade exhibits panels without ornament; it is attached to an octagonal pier of the middle aisle.

Note 327. Letarouilly, Vol. 3. Pls. 258, 260.

Permeated by Gothic details is the hanging pulpit in the Cathedral in Perugia, in elevation recalling those of S. Croce at Florence, and as a further beautiful example of a hanging pulpit may reference be made to that carved in wood, belonging to the Barocco style in S. Maria sopra Minerva at Rome; at the angles of the octagonal enclosure are there arranged caryatids, with rich figure ornamentation of the balustrade.

629. External Pulpits.

As an example of a pulpit for preaching on the exteriors of churches may be mentioned the two small ones on the beautiful portico of the Cathedral in Spoleto, and that with a sheltering roof by Donatello on the cathedral in Prato, with its precious reliefs of cupids on the balustrade. (Fig. 495)

928. 630. Tabernacles.

The tabernacles for the holy oil as a rule are cases let into the wall on the epistle side, and are mostly executed in the form of a small shrine. One such is preserved in the Badia near Arezzo, that is enclosed by little Corinthian pilasters and covered by a segmental tympanum, which contains a blessing infant Saviour at the middle with praying angels at right and left. The panel between the pilasters is designed as a perspective diminishing arched portico, whose rear wall has a small doorway. A corbel on the wall is decorated by an eagle and supports the structure. 328

Note 328. Published in Geymüller, H. von. Illustratione Storica. Pl. 3.

Executed in white marble is preserved another tabernacle in the Cathedral of Lugano, which is represented by Fig. 891.

We have a still more charming example at the end of the left side aisle of Ss. Apostoli in Florence, a small work of Andrea della Robbia, but worth seeing -- similar in composition -- on which in addition to the burned in colors still remain vestiges of glazing.

631. Cimboriums.

Similar to these are to be named the cimboriums or tabernacles, sometimes placed in niches and sometimes detached, executed in bronze and marble. Covered by a dome like a little Corinthian peripteral structure, the whole resting on an antique basis, was designed the bronze cimborium in Fontegiusta in Siena. As an original creation with energetic treatment it may pass the likewise bronze cimborium on the high altar of the cathedral in Siena (Fig. 896), with its charming ornamentation by small figures and angelic forms bearing candles.

To the most beautiful style of the best period belongs the marble cimborium in the choir of S. Domenico at Siena, a work of Benedetto da Majano. On the base adorned by festoons rises a lower part adorned by lion's paws and acanthus leaves, that bears in round medallions the portraits of the four evangelists in relief, over this being the richly decorated candelabra portion of an octagonal temple with the statue of Christ on the apex of the dome.

929 Besides this must not be forgotten another marble show-piece of the early time, the cimborium now placed in the Baptistery at Volterra, a work of Mino da Fiesole, which indeed is not so flowing in form, but deserves the greatest esteem in its architectural strength and the purity of the details. It is a square structure with pilasters at the angles, on a cylinder decorated by flat recesses.

Beautiful, but less important is also the marble cimborium on the old main altar of Ferruccio in the Cathedral at Fiesole, an octagonal temple, standing on an antique vase as a base in a flat niche of the altar.

632. Principal Altars.

Main altars and side altars (votive and mass altars) are to be distinguished. The former finds its place in the principal choir; the others are located in the side choirs and chapels. In Early Christian times it was placed free before the apse, 928 in the middle ages the principal altar was moved back into the choir niche, which was also observed by the Renaissance, so far as not forbidden by special things, as for example in S. Spirito in Florence and elsewhere, where a numerous clergy had to find place behind the high altar.

919 Since the 6th century the lawful form for the high altar

was the stone table like a sarcophagus, the Table. The altar table resting on columns of the Eastern Church, as well as the likewise early developed canopied altar (ciborium), was transferred from the East in the 11th and 12th centuries. The Early Christian Church of S. Clemente at Rome and of S. Giorgio in Velabro, for example, show above the altar table the covering roof resting on columns. The kind last mentioned -- detached altars with ciboriums on columns -- indeed occur continuously, though less common in the Renaissance, where on the contrary the sculptured wall altar found the greatest extension; which was then followed by the altar with paintings within rich and tall architectural frames as a rear wall behind the altar table, and lastly by the stone altar wall.

936 683. Ciborium Altar.

Of the first kind is to be named as a model in marble, the ciborium altar of Michelozzo (1448), that converts a simple altar table with two detached and two engaged columns, that support an entablature like the antique, over this being a tunnel vault, with a closed rear wall, that is covered by paintings of different sizes. ³²⁹ Then designed by the same artist, extended like a chapel and resting on four columns, the ciborium in S. Annunziata in Florence, executed by Pagno di Lago Portigiani (1448-1452), with colored frieze and coffers -- except the Barocco addition, being a finely detailed work. ³²⁹

Note 329. Illustrated in Geymüller, H. von. Michelozzo. Pls. 40, 13, 1.

An uncommonly interesting piece, both in general design as well as in details, is the ciborium altar in S. Francesco at Peschia by Lazzaro Gavalcanti; the ceiling in form of a tunnel vault is supported by piers with intermediate columns, the altar table rests on candelabra-like feet; behind the latter rises a great crucifix. ³²⁹

937 In the Church Madonna del Sasso near Bibiena, the ciborium is conceived as a little temple adorned by columns. Four columns support an entablature like the antique with four low pediments, above which rises a domed roof with lantern; over the altar table is arranged a closed upper wall with a Madonna figure.

Again supported by only two columns and covered by a tunnel vault is the altar enclosure in the Church Madonna del Calcin-

... a beautiful work of the artist's hand. The figure is finely free and standing beneath the cross-like dome of the ... as the ... with the ...

3. Figure as above, executed in bronze by Giovanni.

344. Consecrated Dedications.

On the sculptured panel above, the front side of the figure is covered by relief; above the whole rise statue and relief within a stone architectural enclosure, on the entire top well as marked as great decorative pieces with sculptures and ornaments.

... the ornamentation and with figures of the highest work, was executed the altar of the ... (1517) by ... with almost true and the richness ...

... and more beautiful details of this magnificent work of the decorative art of the Renaissance. (fig. 347). An ... work as the ... in the ... of the ... and ... As another ... to the ... of the ... with its ... and ... the ... of the ... with figures ...

(fig. 348).

The sculptured altar with statue and relief within panel

... is connected with the ...

... a ...

As finely detailed is to be mentioned also the altar of ... in the ... to the ... in ... work of ... (fig. 349); ... of ... as the ... of ... within a ... The ... of ... and ... in the ... of ... in the ... of ...

... (fig. 350).

Calcinaio outside Cortona, a beautiful work of Giorgio Martini. Entirely free and standing beneath the crossing dome of S. Spirito in Florence is the canopied altar with its statues by Gaccini (1600 ?), and as the mightiest and at the same time most animated example is to be named finally the ciborium in S. Peter at Rome, executed in bronze by Bernini.

684. Sculptured Decorations.

932 On the sculptured mural altars, the front side of the table
933 is covered by reliefs; above the table rise statues and reliefs within a rich architectural enclosure, or the entire rear wall is treated as great magnificent niches with sculptures and ornaments.

Incomparably beautiful in the ornamentation and with figures of the highest worth, was executed the altar of the Fontegiusta in Siena (1517) by Marina, with almost free and the richest ornamentation. Angel children and the aged belong to the most complete and most beautiful details of this magnificent work of the decorative art of the Renaissance. (Fig. 897). An equally great work is the Piccolomini altar in the cathedral at Siena, where an entire triumphal arch encloses the altar niche, extending to the crown of the vault. As another beautiful
984 example may be named the sculptured wall altar with its costly enclosure in S. Rita at Palermo, where the surfaces of the pilasters consist of superposed frames with figure reliefs. (Fig. 898).

The sculptured altar with statues and reliefs within mural architecture was especially developed in Naples; there generally the entire altar is constructed with the richest luxury within a niche.

As finely detailed is to be mentioned also the altar of Alexander VI in the passage to the sacristy in S. Maria del Popolo at Rome, a work of Andrea Bregno (1478);³³⁰ good proportions, graceful arabesques, sculptures of distinguished style; especially beautiful is the head of Christ within a semicircle over the main cornice. The shallow shell niche divided by pilasters contains the statues of S. Maria, S. Caterina, and S. Augustine. Another beautiful marble altar is to be found
985 in the fourth side chapel on the right of the same church with Ss. Vincent, Catherine and Antony (1497).

Note 330. Published in Letarouilly, p. 567; Pl. 278.

The tomb-altar of white marble is found in the right side aisle of the Cathedral at Pisa, that arouses particular interest by its ornaments, which recall Michelozzo's treatment, and is again found on the side portals of the Cathedral in L. Lugano. It is asserted in Pisa, that Michelozzo (1475-1564) actually had a hand in the work; so much the more, since there the date of 1536 is cut on the left end. From this time must also date the portals mentioned on the Cathedral in Lugano, which is made especially credible by the peculiar style of the ornaments.

As an intimate work, permeated by the entire charming art of the Robbia school, appears the main altar of S. Maria delle Grazie near Arezzo with the angels' heads, cupids, medallions, the Madonna with praying angels in the tympanum, as well as the ornamentation by little figures in the arch and in the front wall of the altar niche, where the well known delicate and variegated garlands of fruits and the figure of the Madonna are not forgotten. An eternally youthful charm lies in these creations.

Great and rich altar enclosures in colored terra cotta from the end of the 15th century are to be named in Padua (Eremitani) by Giovanni Minello, particularly rich, great and magnificent enclosures of altar figures in marble or terra cotta in Vicenza (S. Lorenzo, S. Corona), where the fifth altar on the left is "one of the most magnificent imaginative works of this kind." Likewise Verona has a series of large and rich pieces to show, and the most graceful and especially happiest in elevation are the altars of Pietro Lombardi in the transverse aisle of S. Marco at Venice, entirely executed in white marble.

685. Picture Altars.

As picture altars are to be designated those, where a mural painting filling the entire wall of the niche is placed in a monumental treatment above the simple altar table. Then also such, where a picture rises from a step, and is enclosed within an architectural enclosure consisting of pilasters and an entablature like the antique, where the latter is carved in wood and covered by color, usually blue and gold. The pilaster surfaces are then mostly colored, with golden ornaments on a blue ground, the capitals, architrave and the main cornice

being entirely white, the entire surface of the building is white. The building is a two-story structure with a flat roof. The walls are made of brick and are painted white. The windows are small and are set in a regular pattern. The building is surrounded by a low wall and a garden. The garden is filled with flowers and plants. The building is a typical example of the architecture of the region.

The most important in this respect is the history of the building and its use. The building was built in the 18th century and has since been used as a residence. It has been the home of several families and has been the site of many important events. The building is a fine example of the architecture of the region and is well worth a visit.

An example of the before mentioned altar with fixed panels is shown in the figure. The altar is made of wood and is decorated with panels. The panels are made of different materials and are arranged in a regular pattern. The altar is a typical example of the architecture of the region and is well worth a visit.

The altar is made of wood and is decorated with panels. The panels are made of different materials and are arranged in a regular pattern. The altar is a typical example of the architecture of the region and is well worth a visit.

A comparison of the altar with the altar in the figure shows that the altar in the figure is made of wood and is decorated with panels. The panels are made of different materials and are arranged in a regular pattern. The altar is a typical example of the architecture of the region and is well worth a visit.

being entirely gilded, the frieze between these showing golden scroll ornament on a blue ground.

Venice and Florence possess the greatest treasures in this kind of enclosures, particularly Florence in S. Maddelena del Pazzi and in the transverse aisle and rear building of S. Spirito. "Here alone can one perceive how a Sandro or a Filippino makes no entirely complete impression in plain or gilded, slightly ornamented hollow frames, when only these magnificent enclosures already allow the echo of the overrich life of the picture. (See J. Burckhardt, Cicerone).

The most important in this respect in the harmony of the picture and frame, Mantegna (1459) has left in his enthroned Maria, with singing angels and saints, within cheerful and magnificent surroundings with panel paintings; the work is at present suspended on a choir wall in S. Zeno at Verona, and is fascinating in effect.

As examples of the before mentioned altars with fixed mural paintings with a simple table must be named that in the Chigi Chapel in S. Maria del Popolo and certain side altars in S. Peter at Rome; in these the wall pictures are mostly executed in mosaic.

The Barocco period loved to indulge in these architectural-ly massive and overrichly treated mural altars with enclosures of straight and twisted, single and coupled columns, curved and broken pediments, where instead of painted figures, sculptured ones occur, as the case in the Gesu at Rome, on the altar of S. Ignazio designed by Andrea Pozzo.

940 A combination of the table altar base and a high ciborium structure of the most distinguished character, proudly showing marble, bronze, and noble kinds of stones, with statuary ornamentation, costly reliefs on the front wall of the altar table, is shown by the main altar of the unequalled Certosa near Pavia, which also here was desired to surpass all else in richness (Fig. 899). It is a work of the 16th century, in which participated Brambilla, Marini, Orsolini, the two last having executed the two angels on the table, and then particularly Annibale Fontana, the famous bronze founder, who executed the candelabras and obelisks.

The twelve marble altars in the Cathedral at Pisa may be mentioned here as further examples of mural altars of rich and

independent style, since these ancient designers attributed

the same to the early period of the art in general.

THE CROSS

to the historical development of the cross during the early
from the earliest times. Made of a noble metal, it formed

architectural termination of the elevation (St. Marks at Venice)
and others at Rome), or it was suspended over the altar.

Later it was placed on the reredos and finally on the table

itself as an altar crucifix between the candlesticks,--a for-
mation still preserved today. As in the other cases, the cross

me of the cross was heightened and further developed by the re-
naissance.

These crosses were made from the earliest times until our days

of wood, were coated with gold, silver or enamel in solid or
silver, or ivory, amber, bronze and stone. A well known and

example of a silver altar crucifix with cross

a Florentine work, is given in fig. 200. Beautifully worked and

also to be found in the Argentinian of Pedro Pertierra in Floren-

ce, of which are occasionally to be found a bronze crucifix

for Giovanni da Bologna, and from the silver cross (fig. 201) given

in fig. 2. It is a work of the

Notes 251. *Illustrated in fig. 2. Vol. 2. p. 126.*

which is in Germany, it generally dates from the 15th and 16th

centuries from a portion of the decoration of the altar.

extended to marble after the design of Michelangelo, and in

to be found on the altar of St. Mark at Venice (fig. 202).

cross) in Florence (fig. 203); and of bronze in a crucifix

way by Antonio Bazzano, on the altar of St. Maria della Sal-

ute in Venice (fig. 204). Of this metal are also the beautiful

in combination of the main lines of the Gothic and Renaissance

made by Antonio Bazzano. Already designed in Bazzano are the

silver crucifixes as was shown at St. Mark (1587-1591) in

Venice, and those of the school of St. Mark in the 16th and 17th

centuries and many others. Other fine pieces are preserved in mu-

seums, for example in the Vatican at Bologna, in the Louvre

cross (Bartolice) at Florence, etc.

important style, since these sketch designs are attributed to Michelangelo, and their execution to Stagi da Pietra Santa.

636. Altar Crosses.

To the liturgical equipment of the altar belongs the cross from the earliest time. Made of a noble metal, it formed the architectural termination of the ciborium (Ss. Nereo ed Achilleo and others at Rome), or it hung suspended over the altar. Later it was placed on the reredos and finally on the table itself as an altar crucifix between the candlesticks,-- a location still preferred today. As in the olden time, the ornamental characterization and decoration of the ends of the arms of the cross was retained and further developed by the Renaissance.

This cross was made from the earliest time until our days of wood, wood plated with gold, solid or hollow in gold or silver, or ivory, amber, bronze and stone. A well known and beautiful example of a silver altar candlestick with cross, a Florentine work, is given in Fig. 900. Beautiful pieces are also to be found in the Argenteria of Palace Pitti in Florence, of which are particularly to be named a bronze crucifix of Giovanni da Bologna, and then the silver cross (1582) given for S. Peter in Rome. 381

Note 381. Illustrated in Simil. Vol. 2. pl. 36v.

Since the 12th century, or generally since the 13th, the candlesticks form a portion of the decorations of the altar. Executed in marble after the design of Michelangelo, they are to be found on the little altar in the Medici Chapel (S. Lorenzo) at Florence (Fig. 902); made of bronze in a charming way by Almondo Bresciano, on the altar of S. Maria della Salute in Venice (Fig. 901). Of this metal are also the beautiful candlesticks of the main altar of the Certosa near Pavia, made by Annibale Fontana. Already designed in Barocco are the silver candlesticks in the choir of S. Stefano (1557-1617) in Venice, and those of the chapel of S. Antony in the Santo at Padua and many others. Other rich pieces are preserved in museums, for example in Museum Civico at Bologna, Museum Nazionale (Bargello) at Florence, etc.

638. Easter Gandelabra.

Besides the altar candlesticks the great candelabras and Easter candlesticks are especially objects of artistic devel-

development; they were executed in wood, bronze, or in the noble metals, also in marble.

A very old piece of this kind from the Cosmati time, striking by the ornamentation in full movement, is the Easter candelabra in S. Cesareo in Rome. Made of bronze are the candelabra beside the main altar of S. Maria della Salute in Venice by Andrea d'Alessandro Bresciani, less important being those in S. Petronio by Agostino de Marchis (1468); then some found in Museum Bargello in Florence. Of the candelabra represented in Figs. 903, 904, the larger is by Valerio Cioli (1529-1599); the smaller is designated as the work of an unknown Tuscan of the 16th century.

982 A magnificent piece of the first rank, "that summarizes the entire knowledge and ability in ornament of the Paduans of that time," is and remains the great bronze candelabra of Andrea Riccio (1507-1516) with the marble base of Francesco da Cola (1515) in the Santo at Padua (Fig. 905). An abundance of spirited and developed ornaments, but too much of a good thing!

Made of massive gold are two candelabras in S. Peter at Rome (1518), which Simil published ³³² under the title of:-- "Executed by Benvenuto Cellini after the drawings by Michelangelo and Raphael!"

Note 332. Simil. Vol. 2. pl. 38.

Of the larger wooden candelabra for churches, two are to be especially emphasized:-- the one made by Fra Giocondo for Monte Oliveto near Buonconvento (Siena), and another with the finest taste in details, but with inferior treatment of the elevation, in the Church S. Maria in Organo at Verona (Figs. 906, 907), carved by Fra Giovanni da Verona.

639. Hanging Lights, Chandeliers and Bracket Lights.

Lighting with oil was still rare in churches in the middle ages, but found extensive employment, particularly in the so-called eternal lamps; these were formed as hanging lamps.

A great number of such suspended lamps, executed in the noble metals, from the earlier and later times, are to be found in S. Annunziata at Florence in the chapel built by Michelozzo at the left of the entrance.

As a monumental example may pass the hanging lamp of bronze in the main aisle of the Cathedral at Pisa, executed after the design of Battista Lorenzi (1587), on which Galileo must

743 have made his observations on the pendulum. Two rings, between which are connected 4 S. Andrew's crosses, between them being inserted supporting cupids, receive a crown of volutes with volutes also beneath; the rings are furnished with candle holders and with small disks hanging on chains, forming an open entirety (Fig. 908).

Chandeliers with hanging glass or crystals were favorite pieces of decoration at church festivals in all Italy.

As works in stone are to be mentioned the four marble candlebras of Matteo Civitali from Lucca on the choir enclosures in the Cathedral at Pisa.

Bracket lights of bronze, shaped as supporting basins and angels holding candles are to be found on the main altar of the cathedral in Siena, where for further lighting at the sides, great bronze angle figures are standing on volutes projecting from the piers. The few clothed statuettes post in a rather theatrical position with outstretched arms, in the hand being a small basin with the pin for the candle.

640. Reliquaries.

At certain church festivals, besides the relics necessary for the consecration of the altar, yet others were exhibited, which were enclosed in artistically wrought, costly cases of the most varied kind and form, and whose exhibition on the altar was expressly approved by Leo IV (847-855). They are in the shape of ivory caskets, ivory boxes, cases of fine woods covered with silk, wrought in gold and silver, cut in precious stones or crystal, made of gilded copper and brass, and were not to be shown "opened"; they were either preserved in the altar cases or in the sacristy cupboards, and they appear as receptacles for the body or as small cases to receive fragments. Likewise in the form of busts to receive the skull of a saint or martyr, made in the form of an arm for concealing the bone of an arm, as fingers, feet, or other large parts of the body, as figures, i.e., as statuettes of the same saint, whose relics are contained therein; in this case wrought in metal or cast hollow.³³³ But they were also made as vessels for exhibition (monstrances), when the relic is found in a cylindrical vessel of glass or crystal, so that it could be seen externally; a beautiful example of this kind, a genuine Italian work from Perugia is given by Fig. 909.

There belong to the class of objects all the so-called early vessels, which were employed in the library; chalices with round bottoms, pattern, boxes for the Host, ciboria and other vessels, vessels for the Holy Oil, mass cells, holy water basins, etc. Works of art and art industry, to which which

442. Stalls and altarpieces.

According to the description, two rows of altarpieces of carved wood and painted work were put side by side, the wooden framed work (ciboria, altarpieces), and the carved, from the strong material, even painted relief with figures in stone, which included carved figures, and more commonly. Both kinds were arranged, or even arranged outside each other on the same place; in representation of figures. The altarpiece was given to figures. In certain cases there occurred an illustration of figures by painting.

Stalls about the middle of the 16th century, the altarpieces

part of the altarpieces; it is mentioned in external effect in the 16th century. The altarpieces had a fine carved wood part from the altarpieces, and this revival did not last long. A considerable part of the altarpieces and altarpieces of the 16th century is given by the 16th, from the choir of St. Basil's in Moscow at the end. In details the following works may be seen especially distinguished as the more important, and may be seen.

1. From the altarpieces with details still visible are the altarpieces by Dmitriy Ivanovich and the altarpieces known in the choir of St. Basil's near Moscow, these have remained to us. In this work is mentioned:--

2. The altarpieces of the altarpieces of St. George (1450-1460) by Giovanni de' Michelini with the altarpieces and altarpieces, and the altarpieces of the works on the altarpieces in Moscow is formed by the altarpieces of the altarpieces in St. Basil's near Moscow.

3. In St. Basil's altarpieces preserved from the time of 1450-1460 a still better-like altarpieces of altarpieces in the upper church of St. Basil's near Moscow.

641. Holy Vessels.

There belong to the altar likewise all the so-called holy vessels, which were employed in the liturgy; chalices with their accessories, patens, boxes for the Host, ciboriums and monstrances, mass flagons and pouring vessels, censers and little vessels, vessels for the holy oil, mass bells, holy water basins, etc. Works of art and art industry, to treat which in detail would go too far for a book on architecture.

642. Stalls and Wainscoting.

According to the technics, two modes of treatment of carved and cabinet work here run side by side: the smooth inlaid work (intarsia, marquetry), and the carved, from low to strong relief, even undercut relief with gilding in places, which indeed occurred later, but more commonly. Both kinds were separated, or even executed beside each other on the same piece; in representation of figures, the preference was given to intarsia. In certain cases also appeared an imitation of intarsia by painting.

Until about the middle of the 16th century, the cabinet work remained in tolerably pure forms; but then it shared the fate of the architecture; it degenerated in external effect and finally became poor. The Rococo for a time breathed new life into the stalls, but this revival did not last long.

A complete idea of the arrangement and treatment of the choir stalls is given by Fig. 906, from the choir of S. Maria in Organo at Verona. In details the following works may be more especially designated as the more important, and may be observed.

1. From the earliest period with details still Gothic are the stalls made by Dominic da Gajuole and Francesco Monciatto in the choir of S. Miniato near Florence, that have remained to us. To this work is connected:--

945 2. The wainscoting of the sacristy of S. Croce (1440-1450) by Giovanni da Micheli with his finely graduated wainscoting, and the close of the works of the 15th century in Florence is formed by the backs of the choir stalls in S. Maria Novella by Baccio d'Agnolo.

3. In Siena is likewise preserved from the time of 1415-1429 a still Gothic-like series of stalls in the upper chapel of Palazzo Pubblico.

4. In Modena exists a stall of 1465 and a wainscoting as well as:--

5. Wardrobes in the sacristy of S. Marco (1450) at Venice, begun by Fra Sebastiano Schiavone, continued by B. Ferronte of Bergamo, and completed by others; they show well carved enclosures and intarsias in a great style.

6. "To the finest intarsias of Italy" belong the magnificent choir stalls in the choir of the Certosa near Pavia (1486), executed by B. de' Polli after Borgogne's design.

7. The choir stalls in the lower part of the choir in the Cathedral at Pisa, made by Domenico di Mariotto and his associates (1478-1515), patched together with the original parts after the fire of 1596, show excellently carved legs and backs, with charmingly treated scrolls and beautiful acanthus leaves. (Fig. 910). Allied to these but still more finely conceived and executed are:--

8. The backs in the Church S. Maria delle Converse at Prato, (Fig. 911), and those in the Badia at Florence (Fig. 912).

9. The famous stalls of the choir of S. Domenico at Bologna with their figure intarsias executed by Fra Damiano Zambelli da Bergamo (1490-1549) with the assistance of his brother and some helpers in 1528-1550, seek their equals throughout the world. An immeasurable richness with the most skilful execution of the picturesque. With the aid of metal inlays for weapons and with the graduation of the tones of the wood, the highest is here attained, that the procedure of intarsia has ever created.

10. As a good work of Riccio (1560) must be named the choir stalls of the lower Church in Monte Cassino.

11. In Palermo, those of G. Gigli (1534) in S. Francesco.

12. Naples is particularly rich in works of the Barocco period, to which the costly sacristy wardrobes in the Annunziata by Giovanni da Nola (1540) form the transition.

13. A very important work, especially in decorative respects and in figure scroll work, are the stalls of the Cathedral choir in Genoa, carved by A. de Fiorinari with complete mastery. (1514-1546).

14. As excellent work and worthily tending to the Genoese style are to be mentioned the choir stalls of S. Giovanni in Parma, the makers being named Zucchi and Testa. (1512-1533).

15. In the middle of the 15th century, the Italian Renaissance was in its infancy. The Italian Renaissance was a movement that began in Italy and spread to other parts of Europe. It was a period of great artistic and intellectual achievement.

16. The Italian Renaissance was a period of great artistic and intellectual achievement. It was a movement that began in Italy and spread to other parts of Europe. It was a period of great artistic and intellectual achievement.

17. In the 15th century, the Italian Renaissance was in its infancy. The Italian Renaissance was a movement that began in Italy and spread to other parts of Europe. It was a period of great artistic and intellectual achievement.

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20. The Italian Renaissance was a period of great artistic and intellectual achievement. It was a movement that began in Italy and spread to other parts of Europe. It was a period of great artistic and intellectual achievement.

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24. The Italian Renaissance was a period of great artistic and intellectual achievement. It was a movement that began in Italy and spread to other parts of Europe. It was a period of great artistic and intellectual achievement.

15. In the choir of S. Giustina at Padua are rich stalls from the beginning of the Barocco period by Riccardo Taurino from Rouen.

16. Stalls likewise belonging to the Barocco epoch in the choir of S. Giorgio Maggiore in Venice are to be mentioned, by Alberto di Brule (1557).

17. In Perugia the famous stalls in the choir of S. Pietro merit the highest recognition, a work of Stefano de' Zambelli da Bergamo (1535), on account of their noble magnificence and perfected taste.

18. Also "the magnificently gay" stalls in the choir of S. Maria maggiore in Bergamo are worthily connected with the charming intarsias of Francesco Capodiferro from Lovere (1522-1532), on which his brother and his son Zimino assisted (1542-1554). The front stalls decorate a light wooden arcade with carved acroterias (sea-nymphs and candelabras); they are a work of Giovanni Belli and his sons (1540-1574). A work of the very highest rank of Italian art industry is found in this creation.

19. But everything yields to the works of Fra Giovanni da Verona (1457-1525) in the Church of his Monastery in Verona -- S. Maria in Organo -- a work as beautiful as skilful (Figs. 906, 913). The wainscoting of the left wall of the sacristy is somewhat later and richer, already rather overloaded in the details, but of wonderful execution. How charming and certain is the carved work, and yet the many repetitions of certain members do not weary the observer, since all is treated with the same love by the artist.

20. In the sacristy of S. Maria delle Grazie at Milan lies before us an example of the imitation of intarsia by painting on wood.

21. Another example of the 17th century is presented by the choir stalls of S. Peter in Rome, ³⁸⁴ dated by Simil about 1626.

Note 334. Published in Simil, Vol. 2.

643. Reading Desks.

Further are to be mentioned the reading and choir desks. In the choir of the Cathedral in Pisa stands a reading desk (Fig. 914), executed by Matteo Civitali from Lucca, that consists of a candelabra of antique form and an eagle with outspread

usually employed by the preceding

as to the later time (1888), on

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wings, a motive previously employed by the preceding art epoch. Another desk belonging to the later time (1626), on which the reading board is supported by cupids instead of the eagle, is to be found in the canons' choir in S. Peter. 335

Note 335. Illustrated in Simil.

742 A more beautiful desk was executed by Fra Giovanni da Verona for the choir of his Church S. Maria da Organo in Verona.

Also in Museum Bargello in Florence is such a one with inlaid work and good carvings (1498), that still stood in the year 1866 in the Monastery of Monte Oliveto near Florence; at least the same piece was there sketched by myself.

644. Bishops' Thrones, Confessionals and Singers' Galleries.

As an ornamental "piece of magnificence of intarsia simplified by the antique" is the bishop's throne in the Cathedral at Pisa, executed in 1536 by Giovanni Battista Cavalliera. From the middle of the 16th century date the two thrones above the steps of the choir there. (Fig. 915).

As examples of confessionals and as skilful and earnest work of the 17th century may be seen such in Ss. Michael & Gaetano at Florence and in S. Michele in Bosco near Bologna by Fra Raffaello with the remarkable representation of the nude Luxury (Lussuria).

One of the most distinguished singers' galleries, exhibiting the greatest luxury in the best sense of the word, is that wrought from white marble with the gilding of certain ornaments, in the Sistine Chapel in Rome. 336

Note 336. Attributed to Eaccio Pintelli (1474) by Simil. -- Burckhardt recognizes in the "similarly decorated marble enclosures" of this chapel the two workshops of Mino da Fiesole and of Giovanni Polmata.

645. Organs.

Of organ galleries are first to be mentioned the two executed in marble at S. Annunziata in Florence; as rich balustrades on consoles above architecture like a triumphal arch; one dates from the 16th, the other from the 17th century. (Fig. 916).

An organ gallery wrought in sandstone with excellent details in S. Maddalena de' Pazzi at Florence, where a closed parapet with small piers containing niches is executed (Fig. 917),

949 as well as a marble organ gallery in S. Stefano at Genoa by

B. da Rovezzano (1499) should not be left without mention.

In S. Giacomo degli Spagnuoli at Rome is an organ gallery, especially interesting by the good preservation of the painting and gilding. "As a splendid large organ balustrade," Burckhardt justly terms that of Vincenzo Vicentino in S. Maria Maggiore at Trient (1534). As beautiful woodwork on which the color of the woodwork alternates with blue and gold design, is to be mentioned the organ front in the Cathedral at Lucca (1481), and the likewise wooden organ front over the door of the sacristy of the Cathedral in Siena, made in 1511 by the two Basiles. *646. Organ Fronts.*

"The most perfect masterpiece of its kind," a work of Giovanni di Pietro, called Castelnuevo, is and remains the magnificent organ front in the Hospital Church della Scala at Siena, and that on the part of the Barocco organ front in Vallesano, and to this may be added also that designed by Vasari for the Cathedral at Arezzo ³³⁷ (Figs. 918, 919) ³³⁸. A stone base with consoles receives the singers' gallery with its stone balustrade. The organ front is flanked by projecting Corinthian columns with ornamented shafts, that support an antique entablature, which extends beneath the ceiling vaults. T The organ pipes are grouped within rectangular frames, divided into seven narrow panels, three of which contain the small pipes and four the large ones -- a beautiful structure, something like a great sideboard. Between the great consoles of the base are inserted niches with little figures; in the middle panel stands a small altar.

Note 337. Illustrated in von Geymüller, Vasari, pl. 11.

Note 338. The late Barocco facade in S. Giovanni in Parma (organo e cantoria) in "Italia Artistica", Parma, No. 19, p. 63, will be compared with the examples mentioned.

Freer in design are the organ fronts in S. Maria del Popolo and the two in S. Maria sopra Minerva at Rome, which in the *952* transverse aisle are arranged over the round-arched vaults of two chapels beside the choir. From the spandrels of the two arches meeting over the dividing pier rise figures, that with the keystones shaped like consoles support the organ balustrade. The organ front itself shows the motive of the triumphal arch, in the style of the tombs of the prelates in the choir of S. Maria del Popolo. The figures have a light and almost

white ivory tone, the pipes the color of tin or silver; all else is gilded.

647. Chapel and Choir Enclosures.

Rome must also have precedence in regard to enclosures of chapels and choirs with the marble enclosure in the Sistine Chapel, that is assumed to be a work of Mino da Fiesole and of Giovanni Dalmata. From the floor first rises a solid white marble enclosure with a height of $6.6 + 1.6 = 8.2$ ft., adorned by arms, cupids and garlands of fruits, on which stand small marble piers of rectangular section, that support on Corinthian capitals a marble entablature, parts together being somewhat over 6.6 ft. high, so that the enclosure rises to a height of about 11.5 ft. To the little piers correspond marble candelabras arranged for lighting by candles, and that stand on the entablature. All surfaces and members are covered by ornaments; the spaces between the piers are closed by simple metal lattices. ³³⁹

Note 339. Illustrated in Siml.

648. Enclosures of Choirs, Chapels and Altars.

Altar enclosures of a simpler kind, but with the noblest ornamentation, likewise of white marble, were executed in S. Maria dei Miracoli at Venice in 1480-1486 under the direction of Pietro Lombardi. The panels with round disks of porphyry, the palms and the dolphins are counted with the most charming Venetian ornamental work.

Marble enclosures with grilles and with inserted columns for enclosing chapels are to be found in excellent work in S. Petronio at Bologna. Enclosures from the 15 th and 16 th centuries in the Churches of S. Maria Maggiore, S. Giovanni in Laterano, Baptistry of S. Giovanni, S. Peter at Rome, further in Milan and Lodi, are published in the source mentioned below. ³⁴⁰

Note 340. Gruner, plate 62.

As a marble balustrade in pure treatment of forms was executed the enclosure in chapel Carafa in S. Maria sopra Minerva (Fig. 921) in Rome, with other beautiful ones in S. Maria del Popolo there.

958 At the high altar in S. Maria delle Grazie at Milan, belonging to the Barocco period, the enclosure is constructed of different materials in an interesting way; the pedestals, the

continuous plinth, and the hand railings consist of red Veronese marble, the framework of the enclosure being of black, the rosettes and clasps of white marble, with the inserted panels of bronze. Grilles entirely of bronze of the time of 1444 are found in the chapel della Cintola Prato by Bruno di Ser Lapo Maggei.

The most magnificent grilles of iron and bronze as chapel, transept and choir enclosures from the nave were executed by the Milanese artists Francesco Villa, Pietro Paolo Ripa, Ambrogio Scagna (1660) in the Certosa near Pavia;³⁴¹ other notable examples are in S. Petronio in Bologna, S. Maria Maggiore at Rome, S. Maria delle Carcere in Prato, etc. The combination of the dark iron with the clean bronze or polished brass is preferred in the related works in the time mentioned. (Second half of the 17th century).

Note 341. See two examples in Beltrami, L. La Certosa di Pavia. p. 130, 131. Milan. 1895.

649. Equipment in Art Industry, Church Furniture.

Of the highest artistic and art-industrial value are those executed objects in the minor arts for churches, characterized by a perfect execution and by the use of costly materials, like gold and silver, enamel, faience, precious and semi-precious stones, mosaic inlays with the employment of marbles of a single, or of many colors, wrought and cast iron, brass and bronze, costly woods, tortoise shell, etc., but even more by its artistic treatment. Here are to be counted the cast bronze and partially gilded leaves of the entrance doors of the principal churches, baptisteries and sacristies, that were already mentioned with the stone enclosures of entrance doorways, and that on account of the combination in at least one example, are not as good as the door leaves of Ghiberti -- the leaves of the middle doorway of the Cathedral in Pisa -- of the time of 1598-1602 (Figs. 922, 923). The division of the leaf into richly decorated framework and rectangular panels, following the antique model, is carried out on almost all bronze doors of the church Renaissance in Italy. (See Florence, Rome, Pisa, Loreto, Naples, the gilded bronze doors of the subterranean church of the Cathedral, etc.). As on every example of the heavy metal works may be taken the enclosing grille of the chapel del Sacro Gingolo in the Cathedral at Prato (Fig. 924),

and an additional piece the missing portion of the
head at this (Fig. 908).

The present form of the canal of S. Javanicus in the side
of the head is similar to that of S. Javanicus in the side
of the head in 1858 and consisted of solid and nar-
row for 21,195,000 in 1858-1859, it is no longer as a nar-
row and very narrow canal. It is similar to that
made for the purpose of other equipment on the side, and to
be connected the vessels for the body connection, of which the
position and two for vessels are represented in Fig. 909. They
were to be seen at the Japanese Exhibition mentioned (1904).

Fig. 910. "S. Javanicus" (Pentamerus, 1904).
An illustration of the connection of the mass vessels is shown
by Fig. 911 (from the same).

Fig. 912. S. Javanicus in position for examination and preservation.
It is a connection of nearly all Indian species, that are
found in the same localities, is preserved in connection of
the same material, not unlike from the same material, a
small and as it is in connection, source for a "S. Javanicus".

Fig. 913. S. Javanicus in position for examination and preservation.
It is a connection of nearly all Indian species, that are
found in the same localities, is preserved in connection of
the same material, not unlike from the same material, a
small and as it is in connection, source for a "S. Javanicus".

Fig. 914. S. Javanicus in position for examination and preservation.
It is a connection of nearly all Indian species, that are
found in the same localities, is preserved in connection of
the same material, not unlike from the same material, a
small and as it is in connection, source for a "S. Javanicus".

Fig. 915. S. Javanicus in position for examination and preservation.
It is a connection of nearly all Indian species, that are
found in the same localities, is preserved in connection of
the same material, not unlike from the same material, a
small and as it is in connection, source for a "S. Javanicus".

and as a magnificent piece the hanging chandelier of the Cathedral at Pisa (Fig. 908).

650 The brazen door of the chapel of S. Januarius in the side aisle of the Cathedral at Naples, an architectural work vowed during the pestilence in 1526 and constructed of gold and marble for \$1,125,000 in 1608-1637, is to be designated as a beautiful and very notable work.⁸⁴² As intimate works in metal made for the purpose of church equipment on the altar, are to be mentioned the vessels for the holy communion, of which the flagon and cup for wafers are represented in Fig. 925. They were to be seen at the Sienese Exhibition mentioned (1904), and were published in the catalogue of C. Ricci of the "Exhibit of ancient Sienese Art." (Bergamo. 1904.).

651 An idea of the costliness of the mass vestments is afforded by Fig. 926 (from the same).

651. Sacristies as Rooms for Exhibition and Preservation.

In the sacristies of nearly all Italian churches, that are themselves architectural works, is preserved an abundance of precious materials, not alone from the Renaissance period, and made accessible as an inexhaustible source for a "stimulating appreciation." (Monza, Milan, Loreto, Bologna, etc.).

652. Santa Casa.

Any arrangement of a singular nature, which led to magnificent works of the highest rank, is the exhibition of the "Santa Casa" (Holy House) in larger and smaller pilgrimage churches of S. Maria, or the provision of chapels for particularly venerated saints in more or less splendid equipment and architectural treatment.

653. Chapels of Saints.

653 As for the magnificence of equipment, the well known one of S. Januarius in Naples is to be placed in the first rank, and then in purely artistic respects with the development of great ornamentation, that of S. Antonio in the Cathedral at Padua. As an example of the simplest kind, we mention the Oratory of S. Francis of Assisi beneath the mighty crossing dome of the Church S. Maria degli Angeli (Portiuncula).

654. Santo Casas in Loreto and in Macereto.

The most characteristic among them is the Santa Casa in Macereto, and that best known and most famous is in Loreto near Ancona. Here the House of the Virgin, at Nazareth, that enjoyed

...in the year 1883, was possibly by ...
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Private ...

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...in the year 1883, was possibly by ...
...in the year 1883, was possibly by ...
...in the year 1883, was possibly by ...

special veneration in the year 336, was brought by angels in 1291 or 1295 to a laurel grove (Lauretum) to protect it from impending destruction. The House of the Mother of God was rebuilt and was placed in the crossing area of a lofty vaulted House of God, enclosed by a rich artistic architecture. (See both plan and section in Laspeyres, pls. 48, 59, 45 and Fig. 719). In a simpler manner the idea in S. Maria di Loreto is expressed at Spoleto and elsewhere, and indeed finally in Lugano in north Italy.

This church arrangement has extended far, even beyond the slopes of the Alps. We find it on a Bramante basis as a chapel under the open sky in Freiburg in Switzerland. Then also in S. Maria Einsiedeln (Switzerland), where reappears the original idea of a dwelling in the House of God, and an imitation thereof in the former Palace garden at Rastatt in Baden. (See Dr. P. Odilio Ringholz, O.S.B., canon and archivist of the Monastery of Einsiedeln, "The House of the Mother, constructional and devotional, or the Chapel of Grace U.L.F. of Einsiedeln." Einsiedeln. 1913.

The sanctuaries of S. Maria as votive chapels or small detached structures in churches are frequently objects of rich treatment. (See S. Annunziata in Florence at the left of the entrance in the church). The chapel of S. Antonius mentioned in Padua is a magnificent work in this respect. On those in Loreto as well as in Macereto were busied artists of the highest rank, Bramante and his pupils (1510); Andrea Sansovino, Girolamo Lomberdo, Bandinelli, Tribolo, Guglielmo della Porta, Raffaello da Montelupo and others made the statues and noble marble reliefs for Loreto, while Riccio, Minello, Jacopo Sansovino and Falconetto executed the works in Padua, there undertaking their best. In Loreto the axes of the sanctuary diverged from the great architectural axis (Fig. 719), a fact based on no deeper grounds. For the works of architecture and sculpture of the Santa Casa in Loreto, see the perspective view in Fig. 927, that exhibits the magnificent exterior, which encloses the original birthplace of the Saviour.

655. Private Chapels.

To these public chapels are frequently added as richly equipped private chapels of rich patricians and princes, as near S. Croce is the Pazzi Chapel, the chapel of the Holy Sepulchre

of Palace Rucellai, the house chapel of Palace Medici-Riccardi with the frescos of Benozzo Gozzoli in the present Palace Riccardi, the chapel Medici (new sacristy) in S. Lorenzo with the sculptures of Michelangelo, a sanctuary of the new art, and the Chapel dei Principi, very magnificently covered with marble -- the tomb-chapel of the Grand Dukes of Tuscany from Cosimo I to Cosimo III, with its costly granite sarcophaguses and the gilded bronze statues of the princes, for which more than \$4,400,000 were expended, then as a simple contrasting work the chapel of S. Antonio in S. Marco, the chapel Pandolphus, etc., all in Florence.

656. Baptismal Chapels.

Baptismal chapels in the sense of the Early Christian time and of the middle ages in Italy were scarcely attempted by the Renaissance movement as independent and detached structures. The oldest and for a long time the only one in Rome must be that built by Sixtus III in the year 482, whose plan and arrangement became typical for allied buildings later. Leo X (1513) furnished the building with a lead roof, and his successor further adorned it according to the taste of the time. As the next oldest design must be regarded indeed the central Church of S. Maria Rotonda (also called maggiore) in Nocera dei Pagani, the Chapel of S. Giovanni in Fonte near the Cathedral in Naples (founded in 400), on which "the transition to the circular dome from the square by means of compartments is particularly worthy of notice," according to the statement of W. Rolfs (p. 3). If S. Vitale is meant by this, the transition there is made somewhat differently, as shown in Fig. 928 as sketched by myself. The transition is also incorrectly represented in Dehio & von Bezold. (*Kirchliche Baukunst des Abendlandes*. Vol. 1. p. 133. Stuttgart. 1887).

The domed Church in Nocera has at the centre a circular basin enclosed by columns, which is surrounded by a balustrade 2.46 ft. high and three steps of 1.73, 1.08 and 1.12 ft. high; on the edge of which stand trunks of columns. The building and the dimensions given were measured by me on Oct. 2, 1907. For the probable internal form of the Baptistery of S. Giovanni in Fonte (Lateran, Rome), see Dehio & von Bezold, also Letarouilly. Vol. 2. pl. 230. p. 508 of text.

Another central church from the Early Christian period, S.

Costanza in Rome, was built as a tomb-church for the daughter of Constantine the Great, then arranged as a church and cannot come into consideration here, in spite of the similarity of plan to that of S. maria Rotondo in Nocera. Of the many wonderful baptisteries in upper Italy, there come in question as models only those in Florence, Parma, Cremona, Chiavenna, Pistoja and that in Pisa, interesting on account of its covering vaults. But also no further development of these is to be seen in the succeeding period. We must therefore admit indeed, that after the dying out of the mediaeval styles of architecture, the erection of separate baptismal churches also ceased, or at least was strongly limited, which indeed resulted from ritual changes in the baptismal service. For example, men wished not to forget, that one or another side chapel of a church with several aisles or a series of chapels was arranged as a baptismal chapel.

657. Tomb Chapel and Tomb Church.

While this species of building ceased, the tomb chapel and tomb church after the antique model remained in use, evidence of which today is afforded by the great millionaire tomb of the Medici in Florence.

The memorial of the great dead was placed in the interior of the church and in the cloisters. The custom of ornamenting and emphasizing the burial place in a striking manner did not die out, but only changed its external form.

658. Votive Chapels.

Agocentral structures in a limited style are to be considered innumerable detached chapel-like buildings, without towers and only characterized by domed roofs, scattered over all Italy, and to be found in almost every little city. Many strange forms of plan and elevation occur among them, but also, much of interest and beauty. Buildings in Greek cross form, polygonal, hexagonal and octagonal, the octagon with shorter or longer projections, the internal and external purely square form, the only externally square with circular internal enclosing walls, are most common. Figs. 929 to 937 give in outline some executed examples of forms of plans from Orvieto, Todi, Foligno, Fratta, Camerino, Spello, Siena and Florence; others are represented by Figs. 938 to 941.

Of special value is the Chapel Emiliana on the island of S.

Michele at Marino of horizontal glass, a structure of the 16th
 internal dome of brick. (Fig. 942) plan and vertical section.
 The external dome is covered with a low attic, beyond which ascends the
 steepled Corinthian columns with two accompanying vertical bands,
 ending in a broken entablature, supporting a block with a sp-
 here. Above these rises a low attic, beyond which ascends the
 hemispherical external projecting dome of stone, crowned by

an ornament like a balustrade. In the interior the resistant an-
 (Fig. 943) plan and vertical section.

horizontal arches, between which rise steep gables that
 (Fig. 944) plan and vertical section. The central wood-
 an projecting roof covered with tiles below the two masonry
 domes, to carry to the exterior collected rain water. For this
 and a small cornice in the peculiar construction, also
 shown by the plan at the middle and the iron bars extending
 radially from it. -- But beautiful is still the little build-
 ing!

as completely built system of arches executed in the
 domes of a good fortification, are to be distinguished those of
 the cathedral in Naples, of which the plan is given in the
 gives it, that their internal architectural treatment, "fired
 from all late additions, shines in the entire purity of the

Survey of Church Environment mentioned.

1. Holy water basin.
2. Holy font.
3. Baptismal font.
4. Pulpit.
5. Reading pulpit.
6. Standing pulpit.

7. Tabernacle for the sacrament.
8. Main altar.
9. Canopied altar.
10. Statue altar.

Michele at Murano of hexagonal plan, a structure of the 16th century whose exterior is built of Istrian limestone with an internal dome of brick. (Fig. 942; plan and vertical section). The external angles are particularly emphasized by boldly treated Corinthian columns with two accompanying vertical bands, ending in a broken entablature, supporting a block with a sphere. Above these rises a low attic, beyond which ascends the hemispherical external protecting dome of stone, crowned by an ornament like a baluster. In the interior the reentrant angles are accented by small coupled columns, connected by semicircular arches, between which rise steep pendentives that bear a circular cornice, above which rises the internal calotte. (See section in Fig. 942). Peculiar is the conical wooden protecting roof covered with tiles before the two masonry domes, to carry to the exterior collected rain water. Foresight and small confidence in the peculiar construction, also shown by the pier at the middle and the iron bars extending radially from it. -- But beautiful is still the little building!

659. Subterranean Churches.

As completely built subterranean churches executed in the forms of a good Renaissance, are to be characterized those of the cathedral in Naples, of which W. Rolfs justly says in Naples II, that their internal architectural treatment, "freed from all late additions, shines in the entire purity of the style."

Survey of Church Equipment mentioned.

1. Holy water basins.
2. Holy fountains.
3. Baptismal fonts.
4. Pulpits.
5. a. Hanging pulpits.
- b. Standing pulpits.
- c. Preaching pulpits on the exterior.
5. Tabernacles for the holy oil.
6. Tabernacles for the sacrament.
7. Main altars.
8. Canopied altars.
9. Statue altars.
10. Sculptured wall altars.

11. White altars.
12. Table altars.
13. Altars with fixed mural paintings.

d. Candelabras.

14. Eternal lamps.
15. Candelabras and processional lights.

e. Stalls and vestments.

16. Stalls and vestments.
17. Reading and singing desks.
18. Confessionals.

f. Organ galleries and fronts.

g. Singers' galleries.

h. Pulpits, thrones.

i. Chancel and choir enclosures.

j. Chapel, transept and choir screens.

k. Holy houses.

An abundance of illustrations of these and of related objects are contained in the parts of the collection of monuments and sculpture. These illustrations, which are in the form of engravings of Goussier's work, as well as representations of engravings, are arranged in a systematic manner.

Note 348. Until now more than 60 richly and well illustrated plates have appeared in the series. The plates are arranged in the foreground, sculpture and painting, but also of architecture. The plates are arranged in a systematic manner. The best Italian illustrations in art have contributed to the understanding of the monuments and many other monuments with great force. The architecture is elegant and beautiful, and excellent are also the selection and reproduction of the illustrations. To every specialist and to all cultured people it is to be recommended.

11. Side altars.
12. Table altars.
13. Altars with fixed mural paintings.
14. Altar ornaments..
 - a. Crosses.
 - b. Candlesticks.
 - c. Easter candlesticks.
15. Eternal lamps.
16. Chandeliers and bracket lights.
17. Reliquaries.
18. Sacred vessels.
19. Stalls and wainscoting.
20. Reading and singers' desks.
21. Confessionals.
22. Organ galleries and fronts.
23. Singers' galleries.
24. Altar enclosures and communion benches.
25. Bishops' thrones.
26. Chapel and choir enclosures.
27. Chapel, transept and choir screens.
28. Holy houses.

An abundance of illustrations of these and of related objects are contained in the parts of the *Collezione di Monografi illustrate*, the series "Italia illustrata", under the direction of Corrado Ricci, as well as representations of embroideries, altar coverings, mass vestments, etc. 343

Note 343. Until now more than 60 richly and well illustrated little volumes have appeared. The great monumental arts here stand in the foreground, sculpture and painting, but views of cities are not neglected. The text is comprehensive and superior. The best Italian investigators in art have contributed to the undertaking, like Malaguzzi-Valeri and many other names with great fame. The manufacture is elegant and beautiful, and excellent are also the selection and reproduction of the illustrations. To every specialist and to all cultured laymen it is to be recommended.

Section XVII. Tomb in Church, Tablets and

660. Tomb, Tablets and

ments, extensive through the entire Christian middle ages,

is sometimes a high pedestal as in Rome, sometimes a wall-
the aristocracy as in Naples and Venice, and then are heroes
of science and art, an eminent statesman (St. Charles in Flor-
ce), the artistically treated monuments were created.

Note 844. See *Q. 1, p. 844.*

According to form, we have to do with pedestals or standing
monuments, the latter belonging more to the later time. The

pedestal pieces for these were indicated by stone or bronze si-

ces, that is, with the pavement. The so-called tombs

(tomb) are of masonry covered by a stone or metal slab, or
entirely covered of metal plates, being tombs elevated above

the pavement; in these the tomb may be decorated or have one

side set against the wall, and also after the form of an arch-

column of the entablature, may be enclosed in form of a niche.

There are to be counted the stone or metal slabs like pedestals
set on columns or other forms, which still belong to the era

of the middle ages.

Tablets and censures were erected in memory of the dead on

the walls and piers of churches and cloisters, and belong to

the species of standing monuments.

That the Gothic created in this domain in Italy is mostly

elaborated, in comparison to what the Renaissance produced. The

former was satisfied by a sarcophagus on columns or supports-

be finished, with often scarcely visible and elevated resting

restless, or also by a sarcophagus on columns with a reces-

sed position. On account of their too elevated position, they

nevertheless had the proper effect; also the simple drawing

of a stone curtain was not the neglectful addition.

The Renaissance dealt with this legacy; but its transformation

of the Renaissance into "Gothic" is a little and reasonable propo-

sition. To this inheritance was added the very much older and

from the Middle Ages, and these together remained not without in-

fluence upon the Renaissance and most wonderful art work

of the Italian Renaissance.

Section XXVI. Tombs in Churches, Tablets and Cenotaphs.

660. Tombs, Tablets and Cenotaphs.

The custom of the burial of the dead of ecclesiastical and noble rank in churches, and of designating the places by monuments, extends through the entire Christian middle ages, ³⁴⁴ and reaches into the latest epoch of the Renaissance. Thus it is sometimes a high priesthood as in Rome, sometimes a warlike aristocracy as in Naples and Venice, and then are heroes of science and art, or eminent statesmen (S. Croce in Florence), for whom artistically treated memorials were created.

Note 344. See Otte, Vol. 1, p. 334.

According to form, we have to do with reclining or standing monuments, the latter belonging more to the later time. The burial places for these were indicated by stone or bronze slabs, that lie flush with the pavement. The so-called tombs (tumba) are of masonry covered by a stone or metal slab, or entirely composed of metal plates, being tombs elevated above the pavement; in these the tomb may be detached or have one side set against the wall, and also after the form of an arcosolium of the catacombs, may be enclosed in form of a niche.

Here are to be counted the stone or metal tombs like bathtubs set on columns or animal forms, which still belong to the end of the middle ages.

Tablets and cenotaphs were erected in memory of the dead on the walls and piers of churches and cloisters, and belong to the species of standing monuments.

What the Gothic created in this domain in Italy is mostly affected, in comparison to what the Renaissance produced. The former was satisfied by a sarcophagus on columns or supporting figures, with often scarcely visible and elevated reclining statues, or also by a shrine resting on columns with a recessed painting. On account of their too elevated position, statues nowhere had the proper effect; also the angels drawing aside a stone curtain was not the happiest addition.

The Renaissance dealt with this legacy; but it transformed the deceased into "beautiful, sensible and reasonable proportions." To this inheritance was added the very much older one from the antique, and these together remained not without influence upon these almost-richest and most wonderful art works of the Italian Renaissance.

Architecture and sculpture equally participated in the
 various the most different kinds of stone came into use
 the different sculpture and painting were to the same
 easily colored and costly sorts, hard granite and porphyry.
 as of Giovanni and Piero del Medici in S. Lorenzo at Florence
 by Andrea Verrocchio. 1460

Note 215. See Gori, V. Monumenti sepulchrali della Toscana.
 Pl. 12. Florence. 1819.

Note 248. Reproduction from the same.
 In the early period a part was played by painting as well
 as by monumental polyphony, when, as the white marble dark
 (some in the walls and in S. Croce at Florence), or heretic
 with red, whereas the outside of some shows in the colors of
 the family (Tomba in Arezzo and S. Spirito (1471) in Rome,
 and the wall surfaces behind the sarcophagi are colored a
 red and rise from a blue ground. (Florence).

The prevailing motive, that is present in the tomb of the
 Renaissance, as a rule is a niche of not too great depth, in
 the lower part being placed the sarcophagus, on which the fi-
 gure of the deceased rests directly or on an ornamental state-
 ment. The semicircular top of the niche is decorated by a volu-
 ture with scrolls or a candelabrum and wrought in high relief.
 The ends of the sarcophagus, the impost of the arch and the
 crown receive statuettes or candelabra. The enclosure of the ni-
 che in Florence is almost entirely formed as Corinthian pilas-
 ters; in Rome being animated by shell niches, in the form of
 columns with flutes, or as mural decorations in form like

Andrea Acciaiuoli in the fortress near Florence, a work of 1550,
 to which as the highest is considered the tomb of Sixtus
 Urban. On a state bed lies the form of the Pope in great

Architecture and sculpture equally participated in the work, wherein the most different kinds of stone came into use, from the plainest sandstone and pure white marble to the most brightly colored and costly sorts, hard granite and porphyry.

Besides these, bronze alone or in combination with costly stone still found employment, for example on the sarcophagi of Giovanni and Piero de' Medici in S. Lorenzo at Florence by Andrea Verrochio. 346

Note 345. See Gozzini, V. monumenti sepolcrali della Toscana. Pl. 13. Florence. 1819.

Note 346. Reproduction from the same.

In the early period a part was played by perishable as well as by monumental polychromy, when beside the white marble dark red porphyry was employed, particularly in the form of panels, (tombs in the Badia and in S. Croce at Florence), or heraldic colors were applied to the marble, especially blue and gold with red, whereon the shields of arms shone in the colors of the family (Tombs in Araceli and S. Prassede (1474) in Rome, and the wall surfaces behind the sarcophagus are colored a reddish-brown. The palls on the state bed carved in stone frequently show flat patterns of fabrics indicated, that are gilded and rise from a blue ground. (Florence).

The prevailing motive, that is present in the tombs of the Renaissance, as a rule is a niche of not too great depth, in its lower part being placed the sarcophagus, on which the figure of the deceased rests directly or on an ornamental state bed. The semicircular top of the niche is decorated by a Madonna with angels or a protecting saint wrought in high relief. The ends of the sarcophagus, the imposts of the arch and its crown receive statuettes or cupids. The enclosure of the niche in Florence is almost entirely formed as Corinthian pilasters; in Rome being animated by small niches, in the form of columns with figures, or as mural decorations in form like triumphal arches, we find them in Venice.

As a tomb is sculptured in marble the beautiful monument of Angelo Acciajuoli in the Certosa near Florence, a work of 1550, alleged to be by Donatello and Giuliano da Sangallo (Fig. 943) 345, to which as the highest is contrasted the tomb of Sixtus IV in S. Peter at Rome, cast in bronze in 1493 by Antonio Pollajuolo. On a state bed lies the form of the Pope in great

... with the figure on his head; four tablets of arms are
front at the angles with six allegorical figures on the border.
... of the whole being a earnest and grand work of

The antique sarcophagus was obtained by Donatello in the
town of Giovanni de' Vettori in the Church S. Lorenzo at Flor-
ence (fig. 944) and Francesco de' Bartolomeo recalled it
in his monument executed for Angelo Marsi in the Annun-
ziata at Florence (fig. 945), with the reclining figure of the de-
ceased, supported on the right arm and reclining on a simply
adorned sarcophagus. The same writer also engraved the Ro-
man shrine with the seated figure for his bishop's tomb.

Likewise Luca della Robbia adhered to the antique sarcophagus
and in his finely beautiful monument for Bernardo Federighi
(fig. 946) in S. Francesco di Paola at Florence. On the lid of a
sarcophagus he placed the statue of the deceased in state
with the right arm raised, on the bosom of the niche
being visible in high relief figures of the Saviour, of the
Virgin and a saint; garlands of flowers in the borders en-
case the niche on four sides, that is terminated by a rather
low cornice. Here is a freer composition, a deeper earnest-
ness in this early occasion, than in all later work pieces.

(fig. 947). With a closed sarcophagus resting on consoles
and the extinction of a part of the deceased, Vito de' Vecchietti
was satisfied in his bishop's tomb in the Cathedral of his
native place (fig. 948) 366; the monument is more of the
elegant delicate, tenderly and beautifully designed and execu-
ted.

Into the family of the Ghibellini, Donatello fell in his monu-
ment for Pope John XXIII in the Baptistery at Florence. He or-
dered a massive Renaissance structure animated by niches with
figures and altars, above which is the simple sarcophagus
on columns with a statue bed like the antique, on which rests
the reclining figure of the Pope, the wall is placed too hi-
gh in proportion to the whole. The form of the Vatican in the

state with the tiara on his head; four shields of arms are found at the angles with six allegorical figures on the horizontal surface of the bed. At the sides and separated by horizontal consoles in part ending in lions' paws, are three reliefs containing figures on each longer side, with two each at the ends, -- the whole being an earnest and grand work of charming beauty!

The antique sarcophagus was utilized by Donatello in the tomb of Giovanni de' Medici in the Church S. Lorenzo at Florence (Fig. 944),³⁴⁶ and Francesco da Sangallo recalled Etruscan models, certainly in a very refined conception (Fig. 945),³⁴⁶ in his monument executed for Angelo Marzi in the Annunziata at Florence (1546), with the reclining figure of the deceased, supported on the right arm and reclining on a simply subdivided sarcophagus. The same master also employed the Roman shrine with the seated figure for his bishop's tomb. (1560). (Fig. 946).³⁴⁶

Likewise Luca della Robbia adhered to the antique sarcophagus in his simply beautiful monument for Benozzo Federighi (1450) in S. Francesco di Paola at Florence. On the lid of the sarcophagus reclines the statue of the deceased in state with the mitre on the head, on the background of the niche being visible in high relief figures of the Saviour, of the Madonna and a saint; garlands of flowers in flat borders enclose the niche on four sides, that is terminated by a rather dry cornice. Here is a greater consecration, a deeper earnestness in this early creation, than in all later show pieces. (Fig. 947).³⁴⁶ With a closed sarcophagus resting on consoles and the exhibition of a bust of the deceased, Mino da Fiesole was satisfied in his bishop's tomb in the Cathedral of his native place (Fig. 948)³⁴⁶; the ornament is there of the greatest delicacy, tenderly and beautifully designed and executed.

Into the faults of the Gothic, Donatello fell in his monument for Pope John XXIII in the Baptistery at Florence. He creates a genuine Renaissance structure animated by niches with figures and pilasters, above which is the simple sarcophagus on columns with a state bed like the antique, on which rests the reclining figure of the Pope, but which is placed too high in proportion to the whole. The form of the Madonna in the

inal of Pontual (1459) in S. Minato near Florence (Eid. 920).

stated in to be praised.

farthest and good in elevation and details again remains Mi-
as a fresco in the town for various uses in the field at Rio-
rance, where the side panels of the walls of the niche and t
the spandrels near the round relief with the Madonna are
executed in red porphyry, while all else is wrought in white

Allied to this is the monument of the Florentine brothers
Boni in the atrium of S. Gherardo in Rome, according to Fur-
bergt, "one of the most beautifully arranged of the entire
city." The base of the two brothers are exhibited in
round niches of the apse, on which a trough-like sar-
cophagus stands, above which and executed as mural reliefs be-
hind the Madonna and the Child, on the right and left thereof
standing a kneeling angel. The severe semicircular tympanum
above yields to a shell with the Florentine coat, also resem-
bling on other monuments; the angles are characterized by balu-
stas (Eid. 921); the spandrels are of particular delicacy.

The three concentric movement and style appear on the fo-
ne of Marignano in S. Croce at Florence (1450) by Desiderio
de Settignano, "which is refined by Ghiberti and not merely
Roman models." "Here has disappeared all coarseness; the happy-
and arrangement below and above also makes enjoyable the ang-
le richness. That elegance was not again attained in this por-
ity and nobility, is especially the scroll work on the
apocryphal. (Eid. 922, 923, 924, and compare the ornamental work
on the side of the Vatican).

Notes. 217. Ghiberti, S. der Giovanni etc. p. 211. Frieze.

1907.

The most important and last form, that the architecturally
arranged wall form could attain, in which the triangular arch,
as nowhere else, is treated with this light dignity, is resem-
bled by Ghiberti in the forms of the oracles in the choir
of S. Andrea in Mantua, which are also in the style of the
great Andrea Briosio (1455); the spandrels below to the

shell is beautiful, but the details of the shell itself are too large, and the stone curtain is not a happy addition. (F (Fig. 949)).³⁴⁶ In this way also suffers the tomb of the Cardinal of Portugal (1459) in S. Miniato near Florence (Fig. 950),³⁴⁶ but where the lower position of the sarcophagus with the state bed is to be praised.

971 Earnest and good in elevation and details again remains Mino da Fiesole in the tomb for Marquis Ugo in the Badia at Florence, where the side panels of the walls of the niche and the spandrels near the round medallion with the Madonna are executed in red porphyry, while all else is wrought in white marble (Fig. 951).³⁴⁶

Allied to this is the monument of the Florentine brothers Bonsi in the atrium of S. Gregorio in Rome, according to Burckhardt, "one of the most beautifully arranged of the entire Renaissance." The busts of the two brothers are exhibited in round niches of the substructure, on which a trough-like sarcophagus stands, above this and executed as mural reliefs being the Madonna and the Child, on the right and left thereof standing a praying angel. The severe semicircular tympanum here yields to a shell with the Florentine arms, also recurring on other monuments; the angles are characterized by balusters (Fig. 952); the arabesques are of particular delicacy.

The highest ornamental movement and style appear on the tomb of Marzupini in S. Croce at Florence (1450) by Desiderio da Settignano, "which is refined by Grecian and not merely Roman models." "Here has disappeared all caprices; the happiest arrangement below and above also makes enjoyable the ample richness. What perhaps was not again attained in this purity and magnificence, is particularly the scroll work on the sarcophagus."³⁴⁷ (Fig. 214, and compare the ornamental work on the Biga of the Vatican).

Note. 347. Burckhardt, J. Der Cicerone etc. p. 231. Basle. 1860).

972 The most important and last form, that the architecturally arranged wall tomb could attain, in which the triumphal arch, as nowhere else, is treated with this light dignity, is recognized by Burckhardt in the tombs of the prelates in the choir of S. Maria del Popolo in Rome, designed and executed by the great Andrea Sansovino (1505); the arabesques belong to the

most beautiful of the entire Renaissance. ³⁴⁸ Besides these art works, there are also in Rome the tomb of Savelli in araceli (1498), distinguished by sculpture and ornament, then that of Petrus Ferris in the great cloister of S. Maria sopra Minerva, further that of Pietro Riario (1474) in the choir of S. Apostoli, and in the cloister of S. Maria della Pace is to be mentioned the tomb of Bishop Ezzacacio (1497), and with these still a hundred others of equal artistic value, that cannot be even named here.

Note 348. Published in Letorouilly.

In the Certosa near Pavia we are also entirely charmed by the tomb of Giovanni Galeazzo Visconti under a two story chapel, begun by Giacomo Christoforo Romano and Benedetto Briosco, (both have left their names on the monument, one on the main cornice, the other on the base of the statue of the Madonna), and completed by the assistance of Galeazzo Alessi and of Bernardino da Novati. (1492-1569). (Fig. 953) ³⁴⁹

Note 349. After a photograph of Beltrami. p.103 et seq.

Strongly influenced by Roman and Grecian motives is the monument of Strozzi in S. Andrea in Mantua (1529), where the sarcophagus with the extended reclining figure of the deceased rests on a slab bordered by mouldings, that is supported by four caryatids. They recall in form and pose a well known Grecian work in marble in the Museum Nazionale in Naples, or those of the Erechtheion on the Acropolis in Athens. Standing on a decorated common plinth, they give to the work a peculiar appearance with special charm. (Fig. 954).

One is there reminded of an allied creation, the tomb of Caracciolo in S. Giovanni at Carbonaro, which is attributed to Andrea di Ciccione. But instead of the female figures, here appear three armed figures leaning against rectangular piers, and with the supports are wrought from one block, as at the Incantada at Salonica, with these forming the supports on which rest the sarcophagus adorned by figures in niches; its front surfaces are decorated by soaring late Roman figures supporting a wreath.

Likewise the monument of Giovanni Borromeo, transferred to Isola bella in 1793, a splendid work of the transition style, exhibits the same motive of three piers with figures at the sides, which support the richly sculptured sarcophagus. ³⁵⁰

part of the work is attributed to Andrea; according to some early tradition Andrea's father worked on this monument in 1474-1475.

Note 250. *Illustrated in Meyer, Vol. 2, Pl. 10.*

During the 15th century the rectangular free supports in the Corinthian, but with an arch above the sarcophagus in which is placed the reclining statue of the hero, in the case of Giovanni in Verona, decorated by Andrea.

The same style belongs to the tomb of Giovanni in Verona. Giovanni's tomb in Verona, where is a niche free figure and space to the elevated location of the sarcophagus, the statue of the hero is represented as standing on the elevated base.

As a representative of the great Venetian monuments, which are constructed as a triumphal arch adorned by columns and a free figure, must be named that of Giovanni A. Venturini in Verona.

Sitting, reclining and standing figures occur on the sarcophagi, and in the case of Giovanni (see example in Verona) of which is placed on the elevated base in Verona.

The tomb from the end of the 15th century is the first in the series which exhibits as a typical form a free figure with a reclining figure, reclining within a small architectural niche the central figure of the deceased.

In a word of these monuments in this kind are taken the monuments of Giovanni in Verona. In the sarcophagus of Giovanni, the so-called Medical tomb in Verona. (Meyer, Vol. 2, Pl. 10) the architecture and sculpture are so combined, as in the latter

modelled from the same clay sarcophagus, statues, figures, niches, arches and windows. Highest unity of space, light and form. A monument in which all will gladly agree after the same basic idea the executed the tomb of Giovanni in Verona of the 15th century, 1474 where that of Giovanni (1474) with the wonderfully beautiful half reclining figure of woman and of justice by Giovanni's father must be designated as the most beautiful.

Note 251. *Illustrated in Meyer.*

The tomb in the chapel of the orders, the central place of

This part of the work is attributed to Amadeo; according to documentary traditions Antonio Batti worked on this monument in 1475-1479.

Note 350. Illustrated in Meyer, Vol. 2. Pl. 10.

988 Omitting the figures with the rectangular free supports like Corinthian, but with an arched niche above the sarcophagus in which is placed the equestrian statue of the hero, is the tomb of Colleoni in Bergamo, designed by Amadeo.

918 To this group also belongs the tomb of Doge Mocenigo in Ss. Giovanni e Paolo in Venice, where in a niche free figures support the sarcophagus instead of figure piers, while with reference to the elevated location of the sarcophagus, the statue of the Doge is represented as standing on the elevated sarcophagus..

919 As a representative of the great Venetian monuments, which are constructed as a triumphal arch adorned by columns and with a figure niche, must be named that of Doge A. Vendramin in Ss. Giovanni e Paolo.

Sitting, reclining and standing figures occur on the sarcophagus, even the rider on horseback, (for example on account of his weight in Bergamo being executed in gilded wood) is not lacking.

The tomb from the end of the first half of the 16th century until in the Barocco period exhibits as a typical form a great sarcophagus with allegorical figures, included within a mural architecture with the portrait statue of the deceased. As a work of great genius in this kind are taken the wonderful works of Michelangelo in the sacristy of S. Lorenzo, the so-called Medici tombs in Florence. (Figs. 955, 956) ³⁴⁶ "Architecture and sculpture are so combined, as if the master modeled from the same clay sarcophagus, statues, pilasters, cornices, niches, doors and windows. Highest unity of space, light and forms."-- A judgment in which all will gladly agree. After the same basal idea are executed the tombs of the Popes in S. Peter of the time mentioned, ³⁵¹ where that of Paul III (1549) with the wonderfully beautiful half reclining figures of wisdom and of justice by Guglielmo della Porta must be designated as the most splendid.

Note 351. Illustrated in Stmll.

The tombs in the chapel of the princes, the burial place of

the House of the Medici in Florence (1498-1500). The design is a simple, elegant, and functional one, with a central archway and two side arches. The arches are supported by a series of columns, and the entire structure is topped by a pediment. The design is a classic example of the High Renaissance style, and it is one of the most famous architectural designs of the period.

and greatness of scale surpassing all echoes of Michelangelo's work. The design is a simple, elegant, and functional one, with a central archway and two side arches. The arches are supported by a series of columns, and the entire structure is topped by a pediment. The design is a classic example of the High Renaissance style, and it is one of the most famous architectural designs of the period.

life work of Michelangelo, of which has only come down to us sketches and separate figures (in S. Pietro in Vincula at Rome, 1528).

Note 822. See also the design for the Palazzo Medici in Florence, 1498.

661. Belli. "At call the living, I mean the dead, I mean the living."

see in action, and serve to wake, warn and call together multitudes of men. For within they were already in use in ancient Rome in the form of hand bells, and in the Christian epoch they served for church purposes. The oldest were in fact small and riveted together from plates, although quite early were mentioned cast bells.

The 9th century is the time of the general extension of the use of church bells. In the corridor of the upper story of the tower in Florence are exhibited seven examples, that all show an elongated corolla form with the usual semi-circular mouth, the oldest specimen of these bearing the date of 1163, while others have the dates of 1273 and 1410. For a long time the hammer is fastened to the top by a pivoted bolt, while externally, for others by means of a screw. Their shape used to be very modest in the middle ages; it was mostly limited to a few mouldings and to inscriptions.

A more richly decorated bell is ornamented at top by festoons and below by a frieze of ovals; as founder is given the following inscription: "Fons. V. G. 1475." In the leaning tower in Pisa some bells show the arms of the city, and one of them bears the inscription: "Fons. V. G. 1475." In the leaning tower in Pisa some bells show the arms of the city, and one of them bears the inscription: "Fons. V. G. 1475." In the leaning tower in Pisa some bells show the arms of the city, and one of them bears the inscription: "Fons. V. G. 1475."

the Grand Dukes of the House of the Medici in Florence (built 1604) show in six niches the magnificent granite sarcophagi executed at a colossal scale for the princes from Cosimo I to Cosimo III (1575-1723), above them being niches with partially gilded statues -- weak in form, but in costly materials and greatness of scale surpassing all echos of Michelangelo's ideas. These were expended for these \$4,400,000 from the private fortune of the family, not from taxes!

Beyond all stands the tomb of Julius II, that was to be the life work of Michelangelo, of which has only come down to us sketches and separate figures (in S. Pietro in Vincolis at Rome. 352

Note 352. See Album Michelangelolisco dei Disegni Originali riprodotto in Fotolitografia. Florence. 1875.

661. Bells.

"I call the living, lament the dead, destroy lightning!"

Bells are far-sounding metal works hung on high, struck or set in motion, and serve to waken, warn and call together multitudes of men. For waking they were already in use in ancient Rome in the form of hand bells, and in the Christian epoch they served for church purposes. The oldest were indeed small and riveted together from plates, although quite early were mentioned cast bells.

The 9th century is the time of the general extension of the use of church bells. In the corridor of the upper story of Museum Bargello in Florence are exhibited seven examples, that all show an elongated corolla form with the usual marginal mouldings, the oldest specimen of these bearing the date of 1153, while others have the dates of 1373 and 1440. For some the hammer is fastened to the top by a pivoted bolt, visible externally, for others by means of screws. Their sculptured ornamentation was very modest in the middle ages; it was mostly limited to a few mouldings and to inscriptions.

A more richly decorated bell is ornamented at top by festoons and below by a frieze of cupids; as founder is given the Florentine master Giovanni M. Cenni with the date of 1675. On the leaning tower in Pisa some bells show the arms of the Medici, and one of them bears the inscription:-- "Fusum. Hoc. Oles. Deoque. addictum. Nicolas. Castillo. Aedituo. A.D. 1606"

The arrangements for ringing the bell are of a rather deta-

detailed character. Beneath the yoke, that has iron pins resting in iron bearings, is a fixed triangular wooden frame, whose apex is placed within and is set in motion during the ringing. Very primitive is the arrangement on the five bells of the campanile in the court of the Annunziata at Florence; on the yoke is nailed a plank extending downward, in which is set a bar at right angles, at the end of which hangs the rope for ringing. It should not be forgotten, that in many churches of Italy, not all the bells are rung, but frequently are merely struck.

A magnificent example in form and ornamentation is the great bell of S. Peter in Rome (Fig. 957), which was recast in 1785. 353.

Note 353. From Simil; Pl. 39. Year 1785 in Simil. -- The lower diameter of the bell is given as 7.48 ft.

981 Section XXVII. Buildings for Monasteries and Brotherhoods.

662. Monasteries.

On this side of the Alps during the middle ages the monasteries had already attained in plan and extent to a high degree of perfection in contrast to Italy, where from the 12 th to the 14 th century, scarcely anything of importance remains in monastic architecture. On the other hand, in the 15 th century the Renaissance again took up this species of buildings, erected them mostly larger and architecturally more magnificently, than was permitted to the North. What favored monasteries and gave them great importance was the "excellent and rational arrangement; the beauty and the many forms of hall architecture," which the Renaissance so well understood how to employ. In the many-sided architectural treatment and development of the cloisters surrounding porticos lies the centre of gravity of this kind of buildings.

But then it is the monastery church itself, whose sacristy and other subordinate rooms, the refectory, chapter hall, dormitory, as well as the dwelling of the prior and the library, that with the necessary agricultural structures (barns and stables), hospitals, guest houses, etc., made the plan very extensive and exceedingly notable.

The magnitude of the buildings and their equipment depended on the rules and the wealth of the order, which they had to serve. The monasteries of the mendicant orders were arranged differently from those of the rich and distinguished Benedictines, and those which imposed on their brothers eternal silence, must create living conditions different from those maintaining direct relations with the external world. Thus for example in the Monastery S. Marco at Florence were arranged small sleeping cells, scarcely as large as a modern prison cell, one after another opening on a common corridor, which served the brothers for habitation. In the great Cistercian monasteries (Certosa near Pavia and near Florence), small houses consisting of two rooms, a loggia, stairs to the attic with a little garden, formed a separate possession for meditative occupancy, one placed beside another and grouped together around a great sunny court. (See the plan of the Certosa near Pavia (Fig. 959) ³⁵⁴ and Fig. 958, plan of the Certosa near

Florence, not entirely trustworthy in details). Excellently preserved in all parts, both monastery plans still afford today a reliable representation of what the builders desired centuries since. Likewise the third Certosa in upper Italy, that near Pisa is splendidly preserved with the Barocco designs of the garden and fountains, and their charming Roman double court with draw wells of the good period, is uninjured and is twice and even thrice worthy of a visit on account of its magnificent landscape surroundings. At present is established there a Royal training school for girls, but the buildings remain accessible with a guide without further formalities. The small Renaissance court with the transverse one story portico forms an architectural jewel.

354. In Beltrami, pl. 8.

(From Eamin and Grandjean).

With the greatest plans are to be counted S. Severino in N Naples, S. Ambrogio in Milan, Monte Cassino and S. Martin near Naples with its magnificent decorations.

If the differences in the dormitories were already recognized as important, this is increased in a greater degree, if one compares the little church of a usually picturesquely located, peaceful and plain small Capuchin monastery on a wooded mountain height with the magnificent church of the Cistercians in the broad plain. Poverty and little art on the one hand, wealth and the most refined art requirements on the other; there whitewashed walls with wooden beam ceilings, brick floors, a simple table altar with wooden candlesticks; here wall surfaces gleaming with marble, gold and precious stones, richly painted and lofty vaults, mosaic and marble floors, costly sculptured wall altars with splendid paintings, tabernacles of bronze, candlesticks and crucifixes of massive gold and silver, reliquaries beset with precious stones, Easter candlesticks of the most perfected art forms, richly wainscoted sacristies, choir table with the finest carving and intarsias, all breathing wealth and high art. (See the certosa near Pavia, indeed the richest and most beautiful monastery in the world."

Thus here also are poor devils and rich masters, who serve their Lord God in the same faith and the same inspiration!

How charming is often the little court covered by vine lea-

leaves, surrounded by porticos, with bright flowers, a draw well or a springing jet of water at the middle, together with the blue sky -- and God's peace! Quite otherwise are the magnificently adorned broad porticos with paintings or marble monuments of the noblest kind on the walls, the columns of the porticos of costly stone, the architecture supported by them, executed in ornamental terra cotta (Pavia), or decorated by varied majolicas (Gertosa near Florence) -- often the ripest works of authentic masters.

In Rome one is so greatly charmed by the simple "court with a hundred columns." of Michelangelo in S. Maria degli Angeli with the draw well and the cypresses several centuries old, as well as that of Bramante in S. Maria della Pace with its richer architectural motives, that in their original conception present one of the most dignified works of the great architect of the high Renaissance. Interesting is the effect of the court of S. Maria della Quercia near Bagnaja in the forms of the transition style, then the different cloisters of Brunellesco at Florence, the most beautiful of which is S. Croce; or those with widely springing arches and slender columns standing on masonry walls at S. Lorenzo and in the Badia near Fiesole. Likewise the small courts in the Gertosa near Florence, especially that narrow in plan with the little Ionic columns set diagonally in the upper story, must not remain without mention.

On Sicilian soil, the Benedictine Monastery in Catania presents a more academic solution of the plan. The church is placed like a cathedral in the middle of the plan, in order to group around it in symmetrical arrangement the courts of the buildings of the monastic brothers. (Fig. 960). This monastery after its completion was one of the greatest of its kind. commenced, then abandoned, again begun and changed, then remaining unfinished, it exhibits all variations in the good and bad taste of the artists, who were successively engaged here for almost three centuries. The corner stone was laid on Nov. 28, 1558, by the Vicesoy Giovanni de la Gerda, the first plans were made by P. Valeriano de Franchis, a learned Benedictine of Catania. What was completed in 1578 was occupied; in 1605 were set the 14 columns of Carrara marble; in 1669 an eruption of Etna caused great injuries; a new earthquake destroyed the

beautiful cloister and the church -- the monastery was abandoned. Yet in 1730 men again commenced its erection, and the following architects destroyed the unity of de Franchis' design, that is reproduced in Fig. 960. Hittorf is enthusiastic, who says in his work mentioned below:-- ³⁵⁶ "One cannot avoid admiring the power of the institutions which create so many marvels," and concerning the stairway wall drawn by him (Fig. 170), he states:-- "It gives a faithful representation of this magnificent stairway," which may be termed appropriate.

Note 356. Hittorf & Zanth. p. 40, 41.

985- 663. Schools.

The buildings of the religious brotherhoods (Confraternities or brotherhoods) are for the care of the fraternity in a foreign place, for common friendly activities, or for purposes of devotion. They mostly appear as "Houses of Societies" in monumental design with frequently rich treatment of the facade. The basis of the architectural programme is composed of a great assembly or council hall, wardrobes for clothing and banners, together with coffee and writing rooms, an added chapel or a wall altar in the hall.

Likewise as two story oratories (Siena) and connected with a small or medium cloister are these fraternity buildings to be found, with the richest belonging that of the Brotherhood bello Scalzi in Florence with the gray on gray frescos painted by Andrea del Sarto.

In Venice these increase to enclosed palaces, that aside from subordinate rooms and a grand stairway, consist of a great lower hall and an upper hall of the same size with an altar. The two finest examples in the city of the lagoons are the Brotherhoods of S. Rocco and the Brotherhood of S. Marco. Both exhibit magnificent facades with rich sculptures and costly marble facings; they are built in two stories with a triply divided facade system.

986 S. Marco exhibits one of the most costly marble portals, and with its facade architecture on the right and left of the portal, its three semicircular pediments, is a decorative showpiece of the first rank, that makes the Place before S. Giovanni e Paolo with the equestrian statue of Solleoni, and its steps toward the canal, one of the most interesting architectural views in the world. Behind the "gay exterior" is now c

concealed "a dreary purpose;" the building, erected in 1485 after the drawings of Martino Lombardi, now serves as a hospital. In the interior are worthy of consideration the three-aisled hall with columns and with a wooden ceiling, the beautifully carved wooden bracket caps with the rich volute consoles on the nobly shaped marble columns, and then further the rich ceilings in the upper story. 357

Note 357. Published in Cicoñara, p. 109 and pls. 156-159.

The plan of S. Rocco (Fig. 961) 358 likewise shows in the lower story a three-aisled hall with an altar wall, besides some administrative rooms, but then a beautifully designed stairway in three flights, that leads to the upper story. As architect is named Antonio Scarpagnino. The magnificent stairway was erected in 1517, the entrance portal dell'Albergo in 1547.

Note 358. From Cicoñara. pl. 195.

The facade shows a termination by a horizontal cornice. Its surface is subdivided in three panels by four projecting columns with broken entablature and belts, which are animated by double windows; those of the upper story are animated by columns supporting pediments, whereby an animated alternation of light and shade is produced on the facade. An overrich piece of magnificence of its kind. 359

Note 359. Published by the same. p. 199, pls. 190-195.

As little chapels, that have rich facades and at the same time must have served as places for assemblies, are to be repeated here the beautiful buildings of the Misericordia in A Arezzo 360 and of S. Bernardino at Perugia.

Note 360. Published in Geymüller.

989 664. Final Conclusions.

As a starting point for our considerations we take the powerful work -- the Cathedral dome of Florence --, which gave the victory to the new art tendency of the Renaissance, which we leave in the general view of the Tuscan capital as the last small display afterwards, (Fig. 962), and take leave of it with grateful hearts. Much lies between this work and the "sham and scrolled nature with the coloring of Borromini in form." Between the two lies the somewhat lean and cold style of Bramante, but also that art period "for the formative and technical arts, which after that of Phidias is alone to be r

regarded as entirely emancipated from barbarism." (Gottfried's Semper's Stil. Vol. 1. Sect. 85. Renaissance). But the same great man feared, that for its removal and further development, since it could only be extended by truly artistic hands, that the danger lay in blunders, now required, as well as in degeneration into the most trivial commonness of the forms. It may be so, but I do not see it as so black. Also I do not believe in an "artless culture," where the sight of a mystery of nature indeed deeply affects mankind, but does not lead it to a frenzy, such as we term Church S. Marco in Venice, the Hermes of Praxiteles or Orlando Furioso, neither that we shall live without art, because it produces greater things, according to Auburtin's opinions. We await them. May our self-taught leaders in the art, to which dilettanteism is connected as a natural appendage, express themselves in such gifted manner as "true and false architectural culture," and indulge in imitations of soulless reproductions of houses by the dozen in the Biedermeier style, then will their prized simplicity only lead to snobbery, and the theory of genuineness in materials to snobbery in materials. (In this sense see R. Scheffler. Neue Rundschau. Heft 8. Year 1912.

Heine's verses still remain to us:--

"Heaven gray and everyday,

Beautiful South! how I revere

Thy heaven, thy gods."

I take as my farewell to my readers at 76, and say with the pleasant fellow (Prologue, Faust I):--

"Whoever is ended, nothing is to be made right for him,

A coming man will always be grateful."

With all the heights, that I find for the South supporting culture and art, I will again recall another word of warning:--

"This land, turned to thee alone,

Produces its finest flowers;

To the earth circle belonging to thee,

O prefer thy fatherland!"

This is as true, as the South is great and beautiful!

"To emphasize a treasure in memory,

That shall be the meaning of my hymn."

Dante. Paradise. Hymn I.

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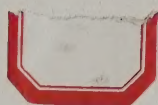
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